ORDER NO. SD81061923C8

Service Manual

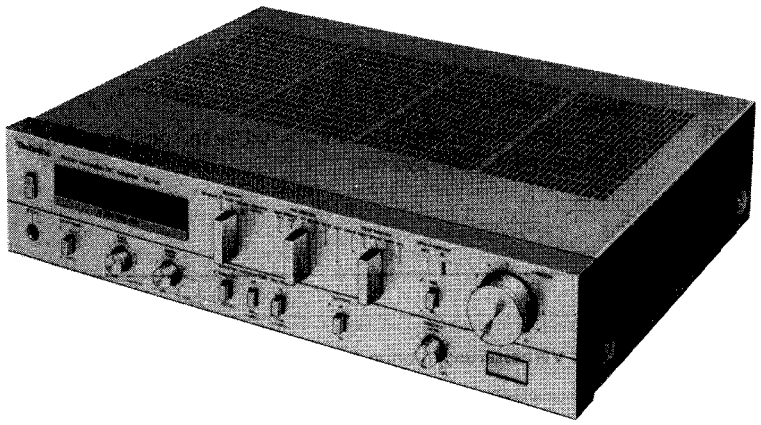
Stereo Integrated DC Amplifier

SU-V5

[E],[EG],[EK],[EF],[EH],
[EB],[Ei],[XA],[XL]

SU-V5 (K)

[E],[EG],[EK],[EH],
[Ei],[XA]



* The cabinet and front panel are available in black color and silver types.
* The black type model is provided with (K) in the Service Manual.

Areas

* [E] is available in Scandinavia and Switzerland.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EH] is available in Holland.
* [EB] is available in Belgium.
* [Ei] is available in Italy.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

English

Specifications

(Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ AMPLIFIER SECTION

20 Hz~20 kHz continuous power output	
both channels driven	2 × 60W (4Ω)
	2 × 60W (8Ω)
40 Hz~16 kHz continuous power output	
both channels driven	2 × 60W (4Ω)
	2 × 60W (8Ω)
1 kHz continuous power output	
both channels driven	2 × 65W (4Ω)
	2 × 65W (8Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.03% (4Ω)
	0.005% (8Ω)
rated power at 40 Hz~16 kHz	0.03% (4Ω)
	0.005% (8Ω)
rated power at 1 kHz	0.007% (4Ω)
	0.003% (8Ω)
half power at 20 Hz~20 kHz	0.007% (8Ω)
half power at 1 kHz	0.003% (8Ω)
−26 dB power at 1 kHz	0.05% (4Ω)
50 mW power at 1 kHz	0.08% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.03%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.007%
Power bandwidth	
both channels driven, −3 dB	
	5 Hz~40 kHz (4Ω THD 0.03%)
	5 Hz~35 kHz (8Ω THD 0.02%)
Residual hum and noise	0.5 mV
Damping factor	20 (4Ω), 40 (8Ω)

Input sensitivity and impedance	
PHONO MM	2.5 mV/47kΩ
MC	170μV/220Ω
TUNER, AUX	150 mV/22kΩ
TAPE 1 REC/PLAY	180 mV/27kΩ
TAPE 2	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	
MM	150 mV
MC	10 mV
S/N	
rated power (4Ω)	
PHONO MM	79 dB (IHF, A: 86dB)
MC	67 dB (IHF, A: 68dB)
TUNER, AUX	89 dB (IHF, A: 100 dB)
−26 dB power (4Ω)	
PHONO MM	70 dB
MC	63 dB
TUNER, AUX	70 dB
50 mW power (4Ω)	
PHONO MM	67 dB
MC	63 dB
TUNER, AUX	68 dB
Frequency response	
PHONO	RIAA standard curve
	±0.5 dB (30 Hz~15 kHz)
TUNER, AUX, TAPE	2 Hz~120 kHz (−3 dB)
	+0 dB (20 Hz~20 kHz)
	−0.2 dB (20 Hz~20 kHz)

Continued on page 2

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Tone controls	
BASS	50 Hz, +10 dB~ −10 dB
TREBLE	20 kHz, +10 dB~ −10 dB
Subsonic filter	30 Hz, −6 dB/oct.
High-cut filter	7 kHz, −6 dB/oct.
Loudness control (volume at −30 dB)	50 Hz, +9 dB
Output voltage and impedance	
REC OUT	150 mV
REC/PLAY	30 mV/82kΩ
Channel balance, AUX 250 Hz~6,300 Hz	±1.0 dB
Channel separation, AUX 1 kHz	55 dB
Headphones output level and impedance	520 mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω

■ GENERAL

Power consumption	515W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 97 × 310 mm (16-15/16" × 3-13/16" × 12-7/32")
Weight	7.8 kg (17.2 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Deutsch

TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 20 Hz ~ 20 kHz	
beide Kanäle ausgesteuert	2 × 60W (4 Ω) 2 × 60W (8 Ω)
Dauerton-Ausgangsleistung bei 40 Hz ~ 16 kHz	
beide Kanäle ausgesteuert	2 × 60W (4 Ω) 2 × 60W (8 Ω)
Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2 × 65W (4 Ω) 2 × 65W (8 Ω)
Gesamtklirrfaktor	
Nennleistung bei 20 Hz ~ 20 kHz	0,03% (4 Ω) 0,005% (8 Ω)
Nennleistung bei 40 Hz ~ 16 kHz	0,03% (4 Ω) 0,005% (8 Ω)
Nennleistung bei 1 kHz	0,007% (4 Ω) 0,003% (8 Ω)
halbe Nennleistung bei 20 Hz ~ 20 kHz	0,007% (8 Ω)
halbe Nennleistung bei 1 kHz	0,003% (8 Ω)
−26 dB Leistung bei 1 kHz	0,05% (4 Ω)
50 mW Leistung bei 1 kHz	0,08% (4 Ω)
Intermodulationsfaktor	
Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω	0,03%
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,007%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	5 Hz ~ 40 kHz (4 Ω, THD 0,03%) 5 Hz ~ 35 kHz (8 Ω, THD 0,02%)
Restbrumm und Geräusch	0,5 mV
Dämpfungsfaktor	20 (4 Ω), 40 (8 Ω)
Eingangsempfindlichkeit und -impedanz	
Phono - magnetisch (PHONO MM)	2,5 mV/47 kΩ
Phono - dynamisch (PHONO MC)	170 μV/220 Ω
Tuner, Aux	150 mV/22 kΩ
Tape 1 Aufnahme/Wiedergabe (TAPE 1 REC/PLAY)	180 mV/27 kΩ
Tape 2 (TAPE 2)	150 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	
magnetisch (MM)	150 mV
dynamisch (MC)	10 mV

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

Geräuschabstand	
Nennleistung (4 Ω)	
Phono - magnetisch (PHONO MM)	79 dB (86 dB nach IHF, A)
Phono - dynamisch (PHONO MC)	67 dB (68 dB nach IHF, A)
Tuner, Aux	89 dB (nach IHF, A: 100 dB)
−26 dB Leistung (4 Ω)	
Phono - magnetisch (PHONO MM)	70 dB
Phono - dynamisch (PHONO MC)	63 dB
Tuner, Aux	70 dB
50 mW Leistung (4 Ω)	
Phono - magnetisch (PHONO MM)	67 dB
Phono - dynamisch (PHONO MC)	63 dB
Tuner, Aux	68 dB
Frequenzgang	
Phono	RIAA-Standardkurve ±0,5 dB (30 Hz ~ 15 kHz)
Tuner, Aux, Tape	2 Hz ~ 120 kHz(−3 dB) +0 dB (20 Hz ~ 20 kHz) −0,2 dB (20 Hz ~ 20 kHz)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB ~ −10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB ~ −10 dB
Tiefenfilter	30 Hz, −6 dB/Okt.
Rauschfilter	7 kHz, −6 dB/Okt.
Gehörrichtige Lautstärkekorrektur (Loudness)	
(bei −30 dB Ausgangsleistung)	50 Hz, +9 dB
Ausgangsspannung und -impedanz	
Aufnahme (REC OUT)	150 mV
Aufnahme/Wiedergabe (REC/PLAY)	30 mV/82 kΩ
Kanalabweichung (Aux, 250 Hz ~ 6300 Hz)	±1,0 dB
Übersprechdämpfung (Aux, 1 kHz)	55 dB
Kopfhörerpegel und -impedanz	520 mV/330 Ω
Lautsprecherimpedanz	
MAIN oder REMOTE	4 Ω ~ 16 Ω
MAIN und REMOTE	8 Ω ~ 16 Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	515 W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T)	430 × 97 × 310 mm
Gewicht	7,8 kg

Français

CARACTERISTIQUES (Sujet á changement sans prearis.)

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sórtie continue de 20 Hz~20 kHz, les deux canaux en circuit 2 × 60W (4Ω), 2 × 60W (8Ω)

Puissance de sortie continue de 40 Hz~16 kHz, les deux canaux en circuit 2 × 60W (4Ω), 2 × 60W (8Ω)

Puissance de sortie continue à 1 kHz les deux canaux en circuit 2 × 65W (4Ω), 2 × 65W (8Ω)

Distorsion harmonique totale
- **à puissance nominale (20 Hz~20 kHz)** 0,03% (4Ω), 0,005% (8Ω)
- **à puissance nominale (40 Hz~16 kHz)** 0,03% (4Ω), 0,005% (8Ω)
- **à puissance nominale (1 kHz)** 0,007% (4Ω), 0,003% (8Ω)
- **à demi-puissance (20 Hz~20 kHz)** 0,007% (8Ω)
- **à demi-puissance (1 kHz)** 0,003% (8Ω)
- **puissance de −26 dB à 1 kHz** 0,05% (4Ω)
- **puissance de 50 mW à 1 kHz** 0,08% (4Ω)

Distorsion d'intermodulation
- **à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω** 0,03%
- **à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω** 0,007%

Réponse de fréquences
- **les deux canaux en circuit, −3 dB** 5 Hz~40 kHz (4Ω, THD 0,03%), 5 Hz~35 kHz (8Ω, THD 0,02%)

Bruit et ronflement résiduels 0,5 mV

Coefficient d'amortissement 20 (4Ω), 40 (8Ω)

Sensibilité et impédance d'entrée
- **PHONO, AIMANT MOBILE (PHONO MM)** 2,5 mV/47kΩ
- **PHONO, BOBINE MOBILE (PHONO MC)** 170 μV/220Ω
- **SYNTONISATEUR, AUX (TUNER, AUX)** 150 mV/22kΩ
- **BANDE 1, ENREGISTREMENT/LECTURE (TAPE 1 REC/PLAY)** 180 mV/27kΩ
- **BANDE 2 (TAPE 2)** 150 mV/22kΩ

PHONO (tension d'entrée maximum, 1 kHz RMS)
- **AIMANT MOBILE (MM)** 150 mV
- **BOBINE MOBILE (MC)** 10 mV

Remarque:
On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

Signal/Bruit
- **à puissance nominale (4Ω)**
  - **PHONO, AIMANT MOBILE (PHONO MM)** 79 dB (86 dB, IHF, A)
  - **PHONO, BOBINE MOBILE (PHONO MC)** 67 dB (68 dB, IHF, A)
  - **SYNTONISATEUR, AUX (TUNER, AUX)** 89 dB (IHF, A: 100 dB)
- **puissance de −26 dB (4Ω)**
  - **PHONO, AIMANT MOBILE (PHONO MM)** 70 dB
  - **PHONO, BOBINE MOBILE (PHONO MC)** 63 dB
  - **SYNTONISATEUR, AUX (TUNER, AUX)** 70 dB
- **puissance de 50 mW (4Ω)**
  - **PHONO, AIMANT MOBILE (PHONO MM)** 67 dB
  - **PHONO, BOBINE MOBILE (PHONO MC)** 63 dB
  - **SYNTONISATEUR, AUX (TUNER, AUX)** 68 dB

Réponse de fréquence
- **PHONO** Courbe nominale RIAA ±0,5 dB (30 Hz~15 kHz)
- **SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)** 2 Hz~120 kHz (−3 dB), +0 dB (20 Hz~20 kHz), −0,2 dB (20 Hz~20 kHz)

Réglage de la tonalité
- **BASSES (BASS)** 50 Hz, +10 dB~ −10 dB
- **AIGUS (TREBLE)** 20 kHz, +10 dB~ −10 dB

Filtre subsonique 30 Hz, −6 dB/oct.

Filtre coupe-hauts 7 kHz, −6 dB/oct.

Compensateur physiologique (volume à −30 dB) 50 Hz, +9 dB

Tension de sortie et impédance
- **SORTIE ENREGISTREMENT (REC OUT)** 150 mV
- **ENREGISTREMENT/LECTURE (REC/PLAY)** 30 mV/82kΩ

Equilibrage des canaux, AUX 250 Hz~6 300 Hz ±1,0 dB

Séparation des canaux, AUX 1 kHz 55 dB

Niveau de sortie des casques et impédance 520 mV/330Ω

Impédance de charge
- **PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)** 4Ω~16Ω
- **PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)** 8Ω~16Ω

■ DIVERS

Consommation 515W

Alimentation CA 50 Hz/60 Hz, 110V/120V/220V/240V

Dimensions (L×H×Pr) 430 × 97 × 310 mm

Poids 7,8 kg

Español

ESPECIFICACIONES (Estas especificaciones están sujetas a cualquier cambio sin previo eviso.)

(DIN 45 500)

■ SECCIÓN AMPLIFICADOR

Potencia continua de 20 Hz~20 kHz en ambos canales 2 × 60W (4Ω), 2 × 60W (8Ω)

Potencia continua de 40 Hz~16 kHz en ambos canales 2 × 60W (4Ω), 2 × 60W (8Ω)

Potencia continua de 1 kHz en ambos canales 2 × 65W (4Ω), 2 × 65W (8Ω)

Distorsión armónica total
- **potencia de régimen a 20 Hz~20 kHz** 0,03% (4Ω), 0,005% (8Ω)
- **potencia de régimen a 40 Hz~16 kHz** 0,03% (4Ω), 0,005% (8Ω)
- **potencia de régimen a 1 kHz** 0,007% (4Ω), 0,003% (8Ω)
- **mitad de potencia a 20 Hz~20 kHz** 0,007% (8Ω)
- **mitad de potencia a 1 kHz** 0,003% (8Ω)
- **−26 dB de potencia a 1 kHz** 0,05% (4Ω)
- **50 mW de potencia a 1 kHz** 0,08% (4Ω)

Continuado en la página 4.

Distorsión por intermodulación
potencia de régimen a 250 Hz: 8 kHz=4:1, 4Ω 0,03%
potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,007%
Power bandwidth
both channels driven, −3 dB
5 Hz~40 kHz (4Ω THD 0.03%)
5 Hz~35 kHz (8Ω THD 0.02%)
Zumbido residual y ruido 0,5 mV
Factor de amortiguamiento 20 (4Ω), 40 (8Ω)
Sensibilidad e impedancia de entrada
TOCADISC. I. M. (PHONO MM) 2,5 mV/47kΩ
TOCADISC. B. M. (PHONO MC) 170 μV/220Ω
SINTON., AUX. (TUNER, AUX) 150 mV/22kΩ
GRAB. 1 GRAB./REPR. (TAPE 1 REC/PLAY) 180 mV/27kΩ
GRAB. 2 (TAPE 2) 150 mV/22kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS)
I. M. (MM) 150 mV
B. M. (MC) 10 mV
Relación de señal a ruido
potencia de régimen (4Ω)
TOCADISC. I. M. (PHONO MM) 79 dB (86 dB, IHF, A)
TOCADISC. B. M. (PHONO MC) 67 dB (68 dB, IHF, A)
SINTON., AUX. (TUNER, AUX) 89 dB (IHF, A: 100 dB)
−26 dB de potencia (4Ω)
TOCADISC. I. M. (PHONO MM) 70 dB
TOCADISC. B. M. (PHONO MC) 63 dB
SINTON., AUX. (TUNER, AUX) 70 dB
50 mW de potencia (4Ω)
TOCADISC. I. M. (PHONO MM) 67 dB
TOCADISC. B. M. (PHONO MC) 63 dB
SINTON, AUX. (TUNER, AUX) 68 dB

Respuesta de frecuencia
TOCADISC. (PHONO) curva RIAA estándar ±0,5 dB (30 Hz~15 kHz)
SINTON., AUX., GRAB. (TUNER, AUX, TAPE) 2 Hz~120 kHz (−3 dB), +0 dB (20 Hz~20 kHz), −0,2 dB (20 Hz~20 kHz)
Controles de tono
BAJOS (BASS) 50 Hz, +10 dB~ −10 dB
AGUDOS (TREBLE) 20 kHz, +10 dB~ −10 dB
Filtro subsónico 30 Hz, −6 dB/oct.
Filtro de corte de altos 7 kHz, −6 dB/oct.
Control de sonoridad (volumen a −30 dB) 50 Hz, +9 dB
Voltaje e impedancia de salida
SAL. GRAB. (REC OUT) 150 mV
GRAB./REPR. (REC/PLAY) 30 mV/82kΩ
Equilibrio de canales, AUX 250 Hz~6 300 Hz ±1,0 dB
Separación de canales, AUX 1 kHz 55 dB
Impedancia y nivel de salida de los auriculares 520 mV/330Ω
Impedancia de carga
MAIN o REMOTE 4Ω~16Ω
MAIN y REMOTE 8Ω~16Ω

■ GENERAL

Consumo de energía 515W
Alimentación de energía CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensiones (An.×Al.×Prof.) 430 × 97 × 310 mm
Peso 7,8 kg

Nota:
La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

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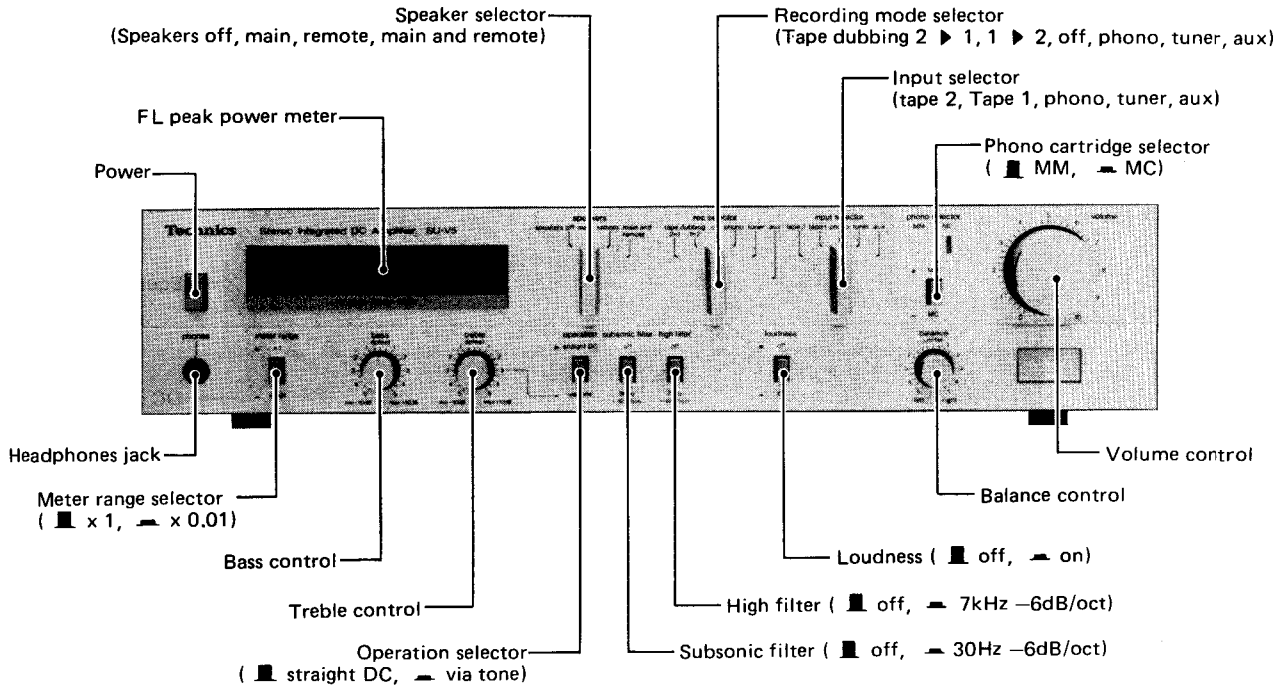
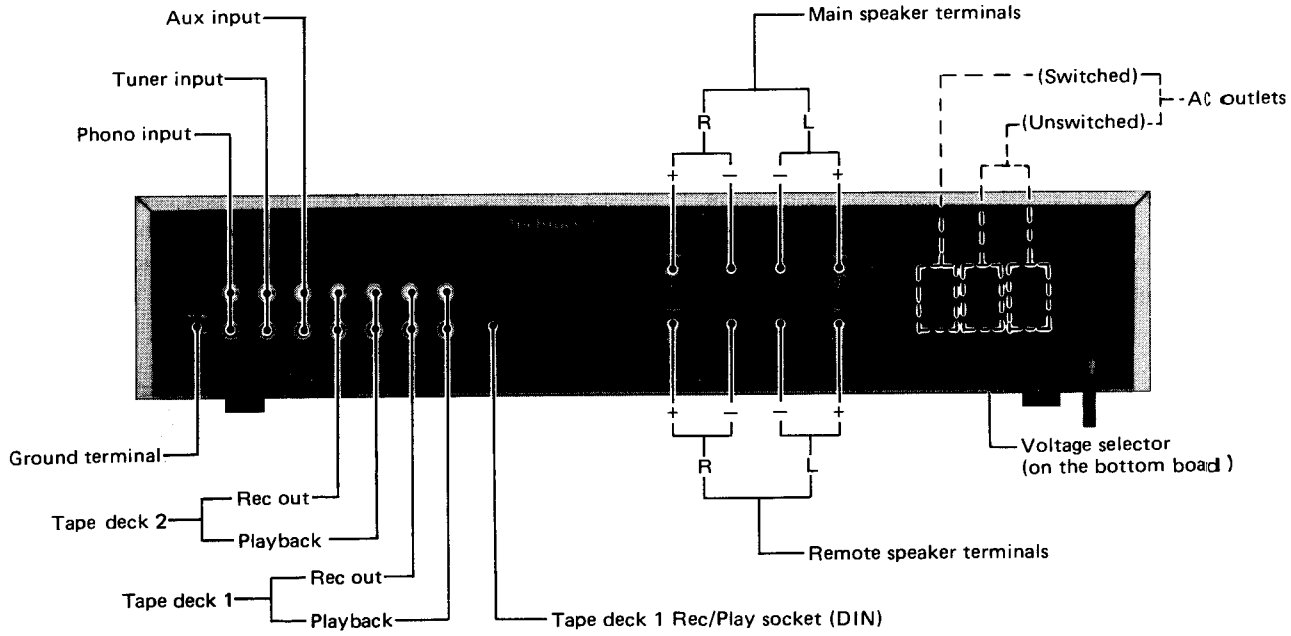
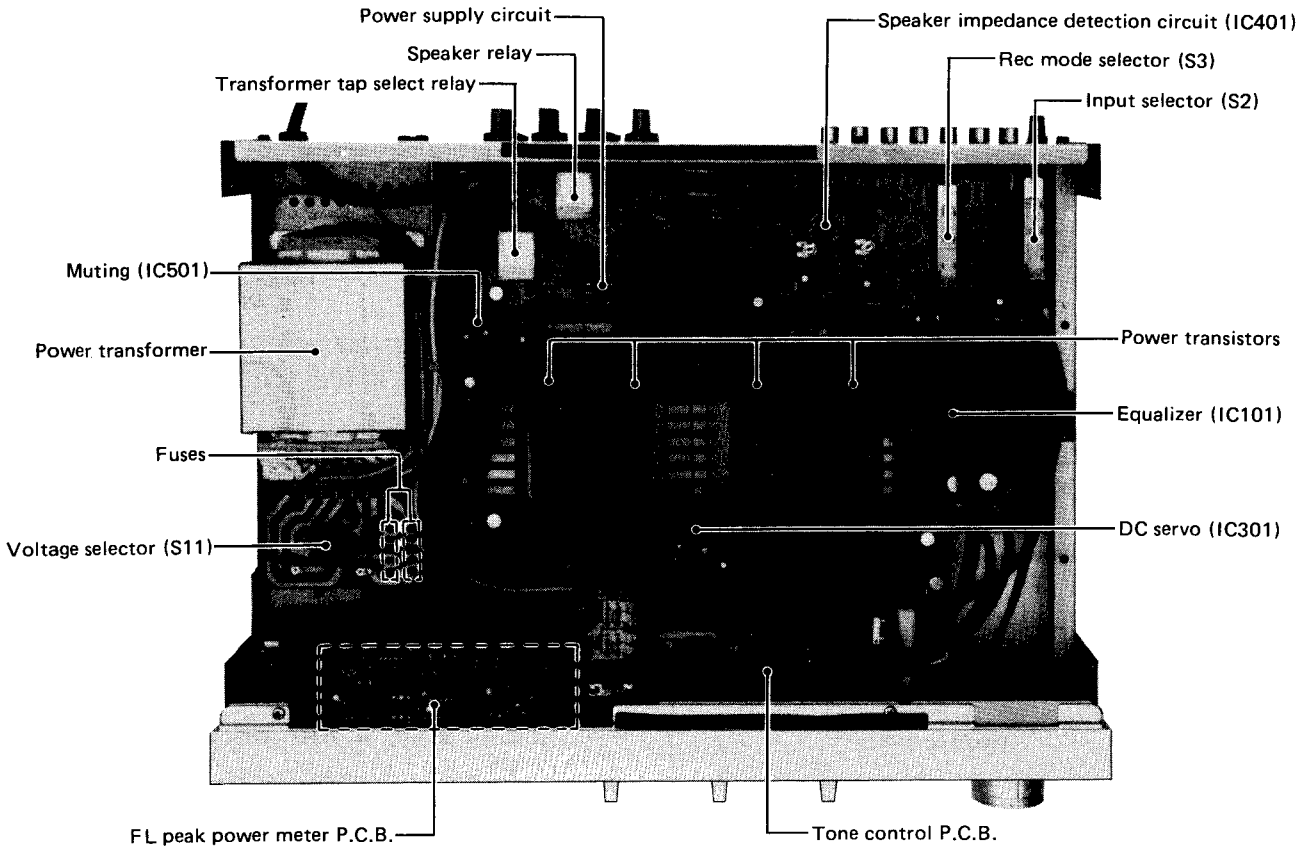
■ LOCATION OF CONTROLS





*** The product for destination [XA] is equipped with AC outlets.**



■ TECHNICAL GUIDES

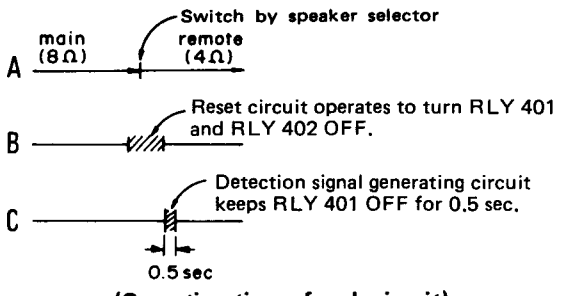
1. SPEAKER IMPEDANCE DETECTION CIRCUIT

This circuit detects the impedance of the speaker connected to the speaker terminal and serves to keep the operation of the unit in best conditions, controlling the constant voltage power supply circuit. It consists of a "**voltage comparing circuit**", "**reset circuit**", "**detection signal generating circuit**" and "**relay drive circuit**".

① Basic principles

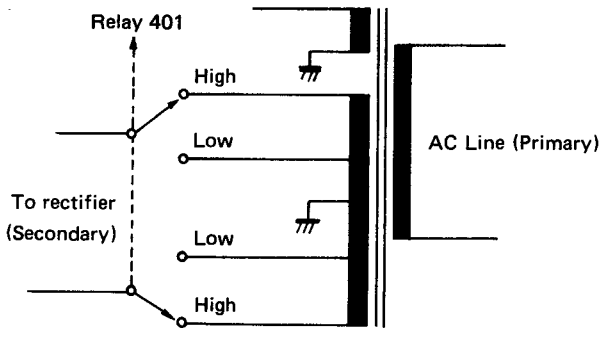
The built-in reset switch is short-circuited only for a moment when speaker selector (S9) is operated. (Fig. 1-A) Simultaneously, the reset circuit operates (Fig. 1-B) to turn both RLY 401 and RLY 402 OFF.

Subsequently, the reset switch opens at the end of operating the speaker selector. Then, the detection signal generating circuit keeps RLY 401 OFF for 0.5 second more. (Fig. 1-C) Since RLY 401 is OFF, the speaker connected to speaker terminal contacts with the voltage comparing circuit. The difference from the reference voltage, that is, the type of speaker connected, is detected; and the secondary side tap voltage of the power transformer is switched by RLY 401 so that the voltage matches the connected speaker.



(Operation time of each circuit)

Fig. 1



(Power transformer)

Fig. 2

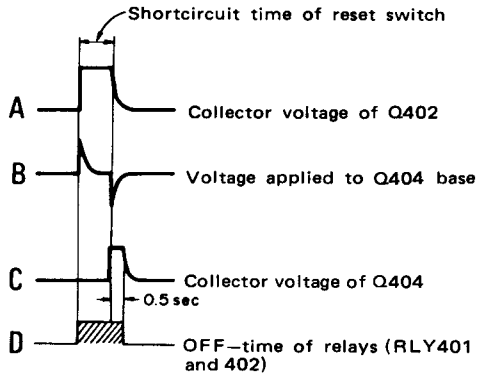
② Reset circuit and detection signal generating circuit

As already explained, when the reset switch is short-circuited, Q402 in the reset circuit turns ON. Positive voltage is generated at the collector of Q402 as shown in Fig. 3-A, causing Q405 in the relay drive circuit [I] to turn ON. (But, the base of Q405 is usually at 0 volt and OFF.)

When Q405 turns ON, the base of Q406 is grounded and turns OFF, causing RLY 401 to turn OFF. Also, the collector voltage of Q406 becomes positive, causing Q408 as well as RLY 402 to turn OFF. (Q406 emitter is connected to pin ⑥ of IC603 and the voltage of this pin is usually zero or a little positive.) In other words, RLY 401 and RLY 402 are OFF while the reset switch is short-circuited.

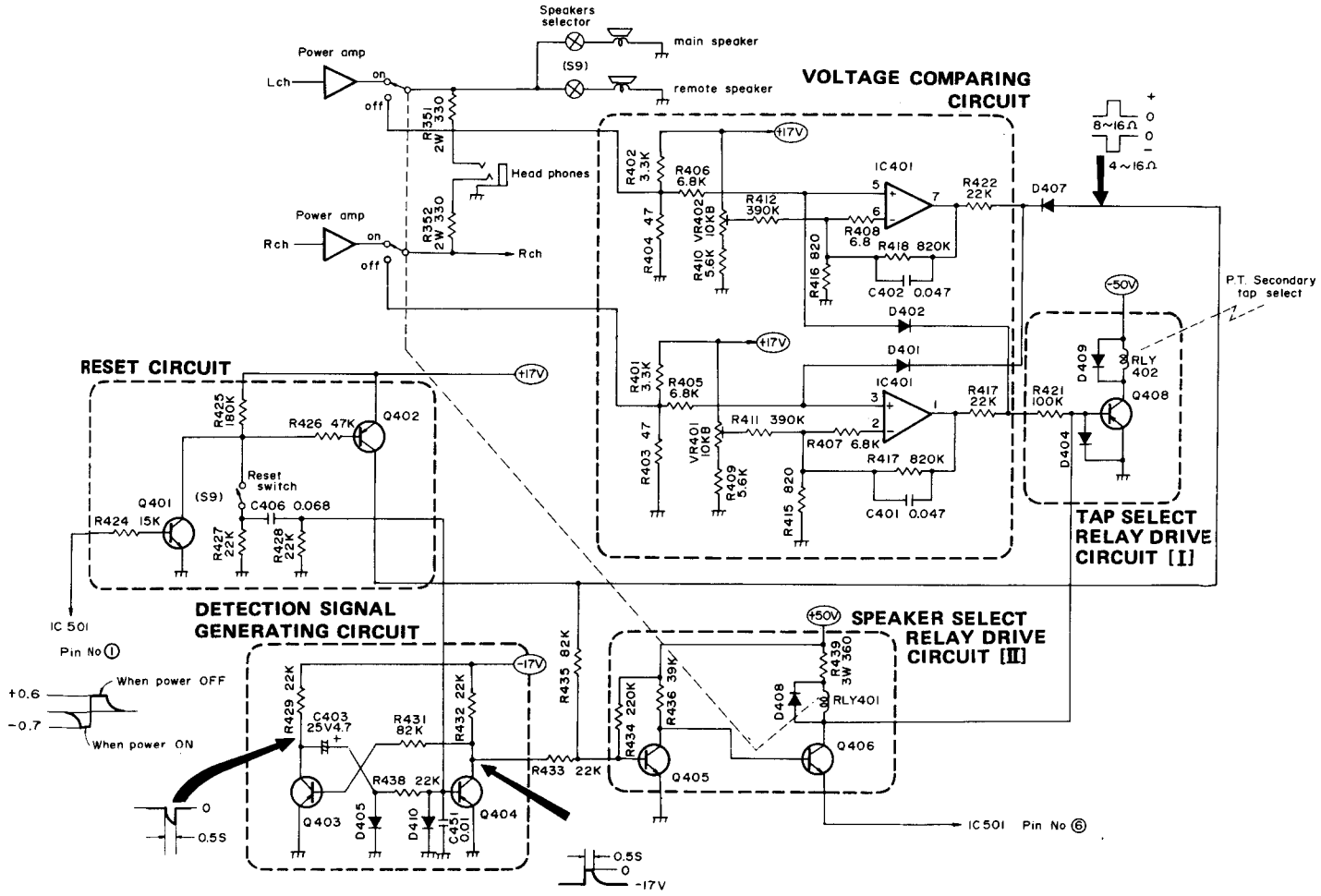
Also, at the moment when the reset switch opens, the voltage as in Fig. 3-B is applied to the base of Q404 in the detection signal generating circuit which uses a multi-vibrator due to the charge and discharge of C406, thus causing this transistor to turn ON.

And voltage as in Fig. 3-C is generated at the collector. The voltage in Fig. 3-C turns Q405 ON, and Q406 OFF, therefore both RLY 401 and RLY 402 turn OFF. RLY 401 and RLY 402 are OFF for 0.5 second. That is, RLY 401 and RLY 402 are turned OFF during shortcircuit of the reset switch and for 0.5 sec. more after opening of the switch.



(Voltage generated at each terminal)

Fig. 3



(Speaker impedance detection circuit)

Fig. 4

③ Voltage comparing circuit

While the relay (RLY402) is OFF, the speaker is in contact with the voltage comparing circuit. (Fig. 5)
The reference voltage is applied to the negative input terminal of operation amplifier (IC401), and the voltage of positive input terminal varies depending on the speaker impedance as shown in Fig. 5. The alteration of voltage is directly related with the output of operation amplifier. Usually the unit is adjusted so that the output voltage is zero with 6Ω speaker connected, and the output voltage of operation amplifier becomes negative with 4Ω speaker connected, and the output voltage becomes positive with 8Ω speaker connected. Only when the voltage is negative, Q408 and RLY 402 turn ON, switching the secondary side tap voltage of power transformer to 30.8V.
Incidentally, when 8Ω speaker is connected to Rch and 4Ω to Lch, negative voltage is generated.

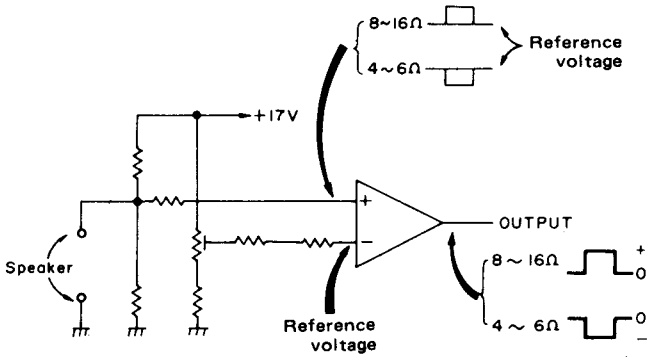


Fig. 5

④ Voltage comparing circuit and reset circuit

The operation amplifier of **"voltage comparing circuit"** holds the detected impedance 8Ω or 4Ω. **Therefore, if a speaker of different impedance is connected, it is necessary to turn off the power supply or switch the speaker selector and to operate the reset circuit. That is, the relays (RLY401 and 402) must be turned OFF.** The base of Q401 in the reset circuit is connected to pin ① of IC 603. Positive voltage is generated at this pin for a moment when power supply is turned off, causing Q401 to turn ON.
As Q401 turns ON, the reset circuit momentarily operates to reset RLY 401 and RLY 402.

2. DESCRIPTION OF MUTING/RELAY DRIVE IC (SVITA7317P)

- **Functions**
  1. Click noise prevention during power ON/OFF.
  2. Protection of speakers and power transistors from breakdown.

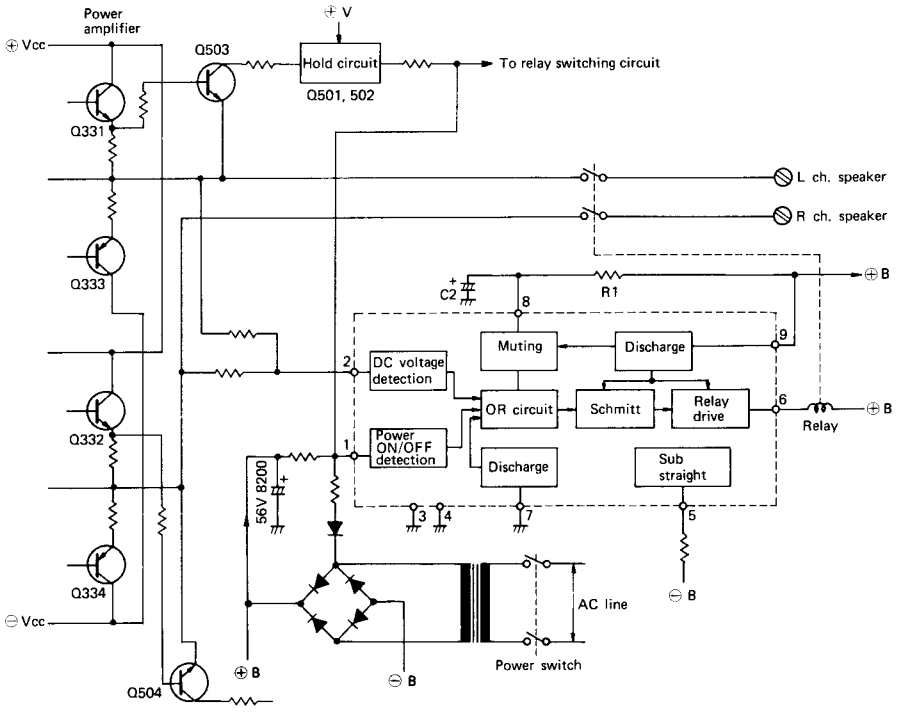
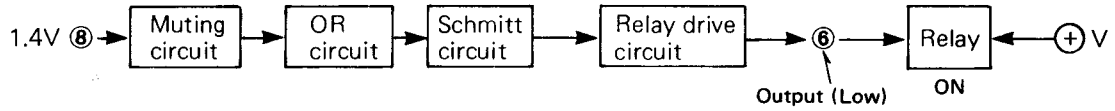


Fig. 6

- **Operation**

1-1 Relay (RLY401) turns ON about 5 seconds after power ON. Therefore, no click noise is produced from the speaker.



- About 5 seconds after power ON, about 1.4V is applied to terminal ⑧. This voltage is applied to "OR circuit", turning the "Schmitt circuit" ON, "Relay drive circuit" ON, and the voltage of terminal ⑥ to "Low, then the relay turns ON.
  At that time, −0.7V is applied to terminal ①, causing "power ON/OFF detection circuit" to turn OFF, and the voltage (1.3V) to be applied to the "Schmitt circuit".
  (Note) Voltage of terminal ⑧ is determined by R1 and C2.

(Complete charge characteristic curve)

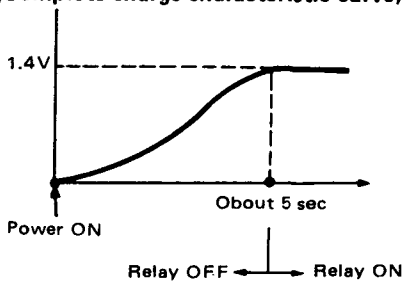
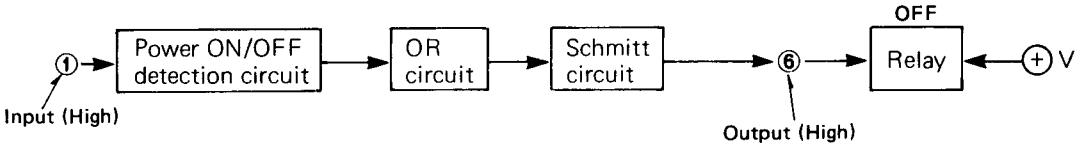
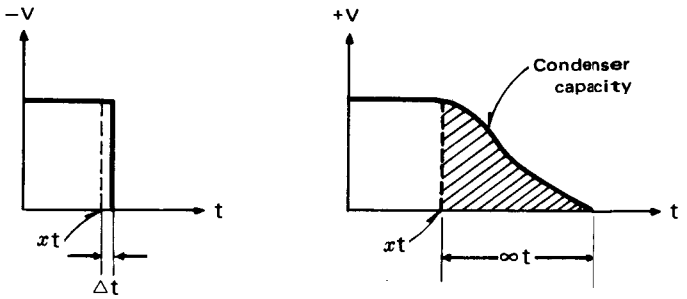


Fig. 7

1-2. No click noise is produced from the speaker when power supply is turned OFF.



- When power supply is turned OFF, the negative (−) voltage drops faster than the positive (+) voltage. At that instant, the positive (+) voltage is applied to terminal ①, turning the "Power ON/OFF detection circuit" ON, "OR circuit" OFF, "Schmitt circuit" ON, "Relay drive circuit" OFF, and the voltage of terminal ⑥ to "High", then the relay turns OFF.



(Voltage drop time comparison)

Fig. 8

xt: power switch OFF-time
Δt: negative (−) voltage drop time
∞t: positive (+) voltage drop time

$\Delta t < \infty t$

1-3. Difference in drop speed between negative and positive voltages

- No condenser is located on the negative (−) side, while a condenser (56V, 8200μF) is on the positive (+) side. Therefore, the voltage drop speed is faster on the negative (−) side.

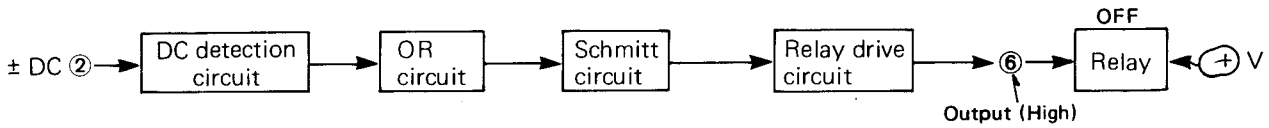
2-1. Protection of power transistor in case of speaker terminal shortcircuit

When speaker terminal is short-circuited, a large amount of current flows into the emitter resistor of power transistor, causing Q503 (in case of Lch) to turn ON. Then, the collector potential becomes zero, and the hold circuit (Q501, 502) is turned ON. As the hold circuit is ON, the voltage level of pin ① of SVITA7317P becomes high, and so becomes the output of pin ⑥, causing the relay to turn OFF. On the other hand, the voltage of pin ① turns the relay switching circuit Q401 ON, Q402 ON, Q405 ON, and makes the base potential of Q406 zero, causing the relay to turn OFF.

Through these operations, the relay is turned OFF, and the speaker terminal and power amplifier connecting circuit is opened. However, the relay remains turned OFF by the hold circuit (Q501, 502) even in case of no abnormality. So, reset the relay by turning off the power switch.

2-2. It protects the speakers when main amplifier becomes defective

When DC voltage is applied to terminal ② due to main amplifier trouble, the "DC detection circuit" turns ON, "OR circuit" turns OFF, "Schmitt circuit" ON, "Relay drive circuit" OFF, and the voltage of terminal ⑥ to "High", then the relay turns OFF, thus protecting the speakers.



■ DISASSEMBLY INSTRUCTIONS

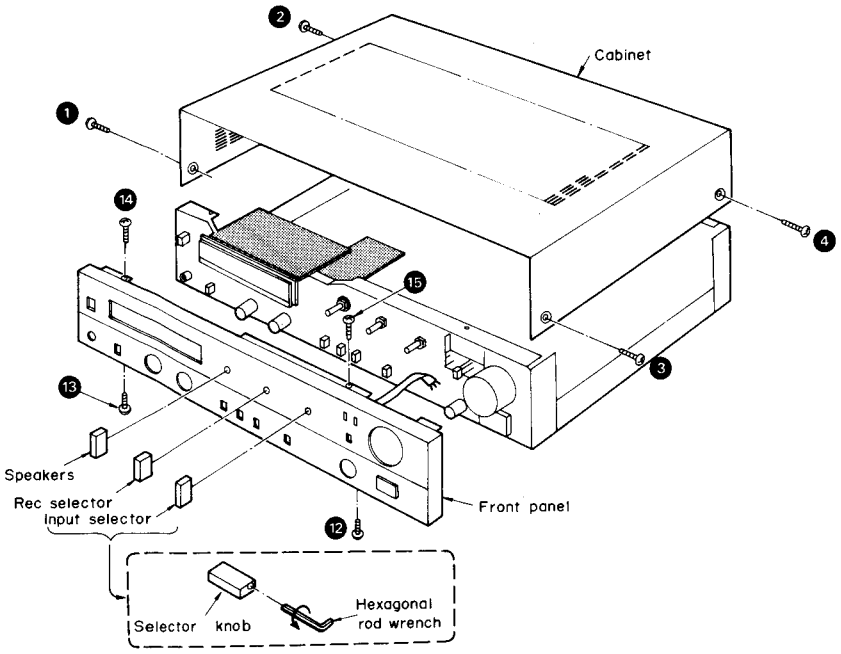


Fig. 9

1. How to remove the cabinet and bottom board

1. Remove the 4 setscrews (❶ ~ ❹ in Fig. 9) of the cabinet.
2. Remove the 7 setscrews (❺ ~ ⓫ in Fig. 10) of the bottom board.

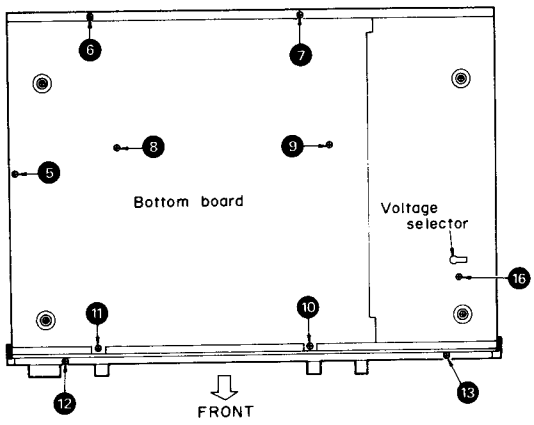


Fig. 10

2. How to remove the front panel

1. Remove the cabinet.
2. Remove the 3 selector knobs. (Use hexagonal rod wrench for M3 screws.) Refer to Fig. 9.
3. Remove the 4 setscrews (⓬ ~ ⓯ in Fig. 9) of the front panel.
4. Disconnect the flat cable from the lead connector (J16) of phono selector switch.
5. Remove the front panel from the chassis, holding its right and left sides, taking care not to damage the knobs, etc.
6. When mounting the panel, the flat cable from MM/MC indicator LED printed circuit board must be connected to J16 terminal ① on the printed circuit board side and to J16 terminal ① on the phono selector switch side. Refer to Fig. 11.
7. Fit the transparent cover of FL meter in the front panel window as in Fig. 13 by moving it with fingers as in Fig. 12.

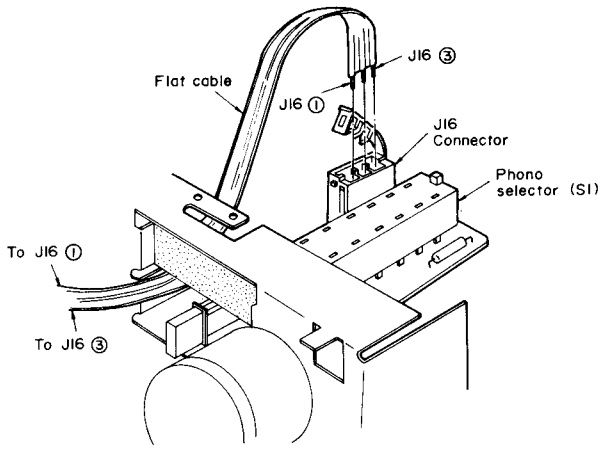


Fig. 11

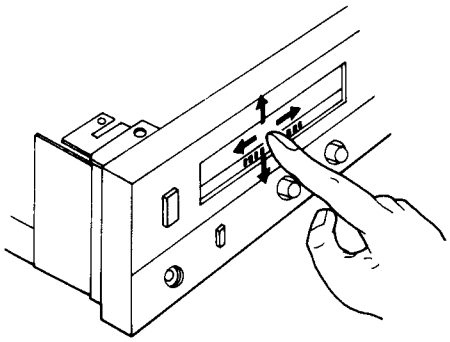


Fig. 12

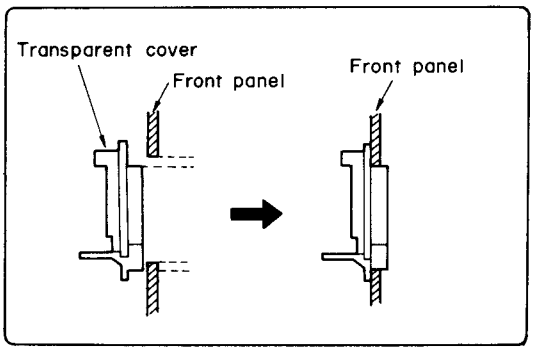


Fig. 13

3. How to remove fuse and voltage selector

1. Remove the cabinet.
2. Take off the fuse cover.
3. Remove the screw No. ⑯. (Refer to Fig. 10 and 14)
4. Remove the fuse printed circuit board as in Fig. 14.
5. Replace the fuse.

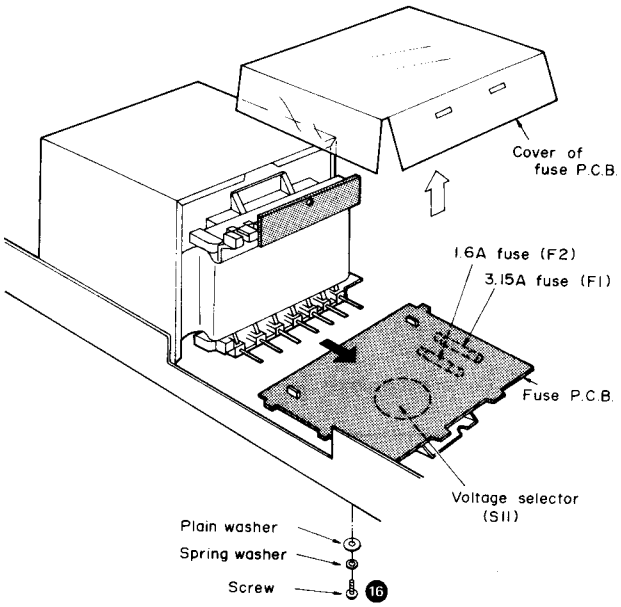


Fig. 14

4. How to remove the power transistor

1. Unsolder the power transistor as shown in Fig. 15.
2. Remove the 7 setscrews (⑰ ~ ㉓ in Fig. 16 and 17) of heat-sink and then lift the heat-sink along with the power transistor.
3. When installing the power transistor, apply heat diffusing agent (silicon powder, etc.) to both sides of the mica plate, and secure it on the heat-sink with setscrews. Next, secure the heat-sink on the chassis and then solder the power transistors.
   Also, when installing heat-sink, apply heat diffusing compound (silicon powder, etc.) to Ⓐ and Ⓑ point. (Refer to Fig. 17)

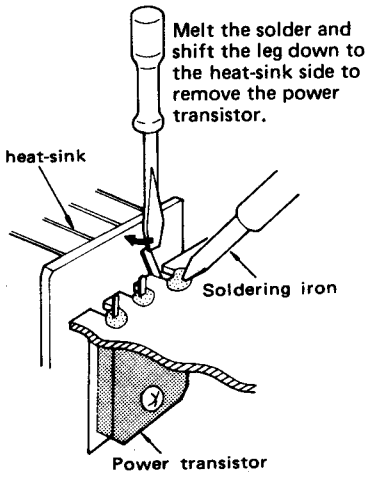

Melt the solder and shift the leg down to the heat-sink side to remove the power transistor.
heat-sink
Soldering iron
Power transistor

Fig. 15

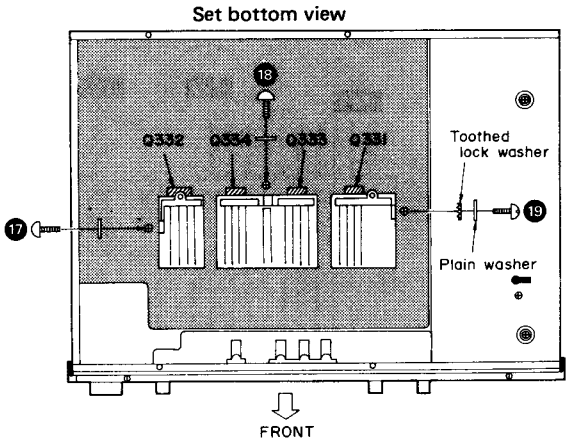


Fig. 16

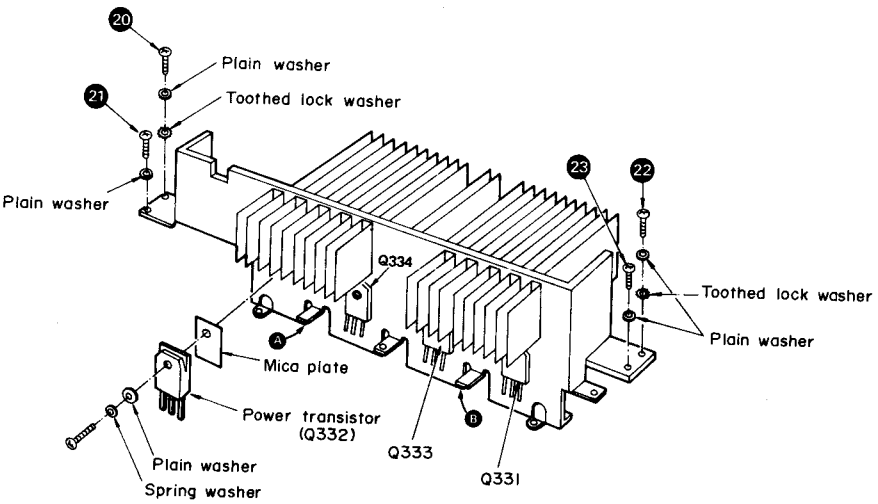


Fig. 17

■ BEFORE REPAIR AND ADJUSTMENT

Turn off the power supply and short-circuit both ends of power supply condensers (C601, C602, 8200μF) at resistance (about 10Ω, 5W) in order to discharge the charged voltage. Avoid short-circuit with a screwdriver or the like, otherwise the transistors or diodes may break down.
Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a voltage regulator to make sure that the current consumed is free of abnormality. The current consumed at 60Hz/50Hz in no-signal mode is shown below with respect to supply voltage 110V/120V/220V/240V.

Power supply voltage		AC 110V	AC 120V	AC 220V	AC 240V
Current consumed	50Hz	260 ~ 520mA	250 ~ 500mA	140 ~ 270mA	130 ~ 250mA
	60Hz	250 ~ 500mA	240 ~ 480mA	130 ~ 250mA	120 ~ 240mA

■ ADJUSTMENT POINTS

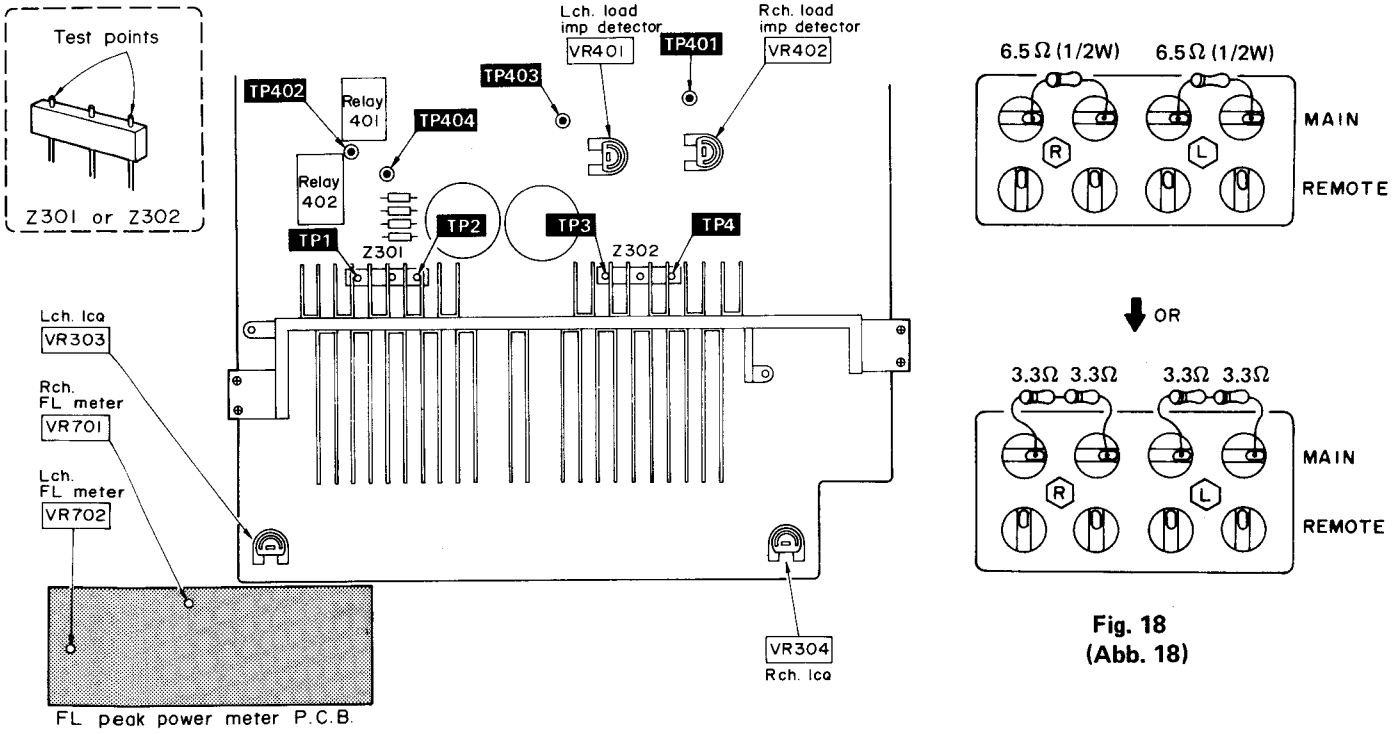
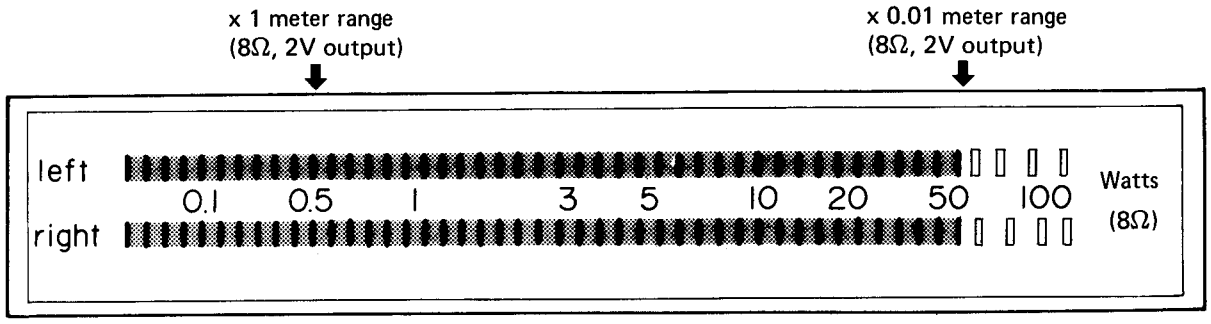


Fig. 18
(Abb. 18)



FL peak power meter

Fig. 19 (Abb. 19)

■ MEASUREMENTS AND ADJUSTMENTS ——— English ———

1. Load impedance detection and idling current of power transistor (ICQ)

● Setting and instruments used

1. Operation switch . . . . . straight DC
2. Speaker selector . . . . . main
3. Sound volume . . . . . 0 (minimum)
4. DC voltmeter (able to measure 4mV)
5. Instruments for circuit operation check
   (AC voltmeter, 1kHz oscillator, 8Ω load, 5W 0.33Ω resistor, 1/2W 6.5Ω or 3.3Ω & 3.3Ω)

Item	Connection of DC voltmeter	VR adjusted	Adjustment
Adjustment of load impedance detection circuit	*Connect a load with 6.5Ω (1/2W carbon resistor) or series-connected 3.3Ω and 3.3Ω (1/2W, ±5%) to the "main" speaker terminal. (Fig. 18) *Connect a DC voltmeter between TP401 and chassis.	VR402	*Connect TP402 and TP404 *Completely turn VR401 and VR402 anticlockwise beforehand. *Adjust VR402 so that the voltage of TP401 is −0.1V. *Adjust VR401 so that the voltage of TP402 is 0V.
	*Connect a load with 6.5Ω (1/2W carbon resistor) or series-connected 3.3Ω and 3.3Ω (1/2W, ±5%) to the "main" speaker terminal. (Fig. 18) *Connect a DC voltmeter between TP403 and chassis.	VR401	
Adjustment of ICQ	L channel Connect voltmenter to TP1 (+) and TP2 (−)	VR303	① Completely turn VR303 and VR304 anticlockwise beforehand ② Adjust VR303 (L channel) and VR304 (R channel) so that the voltage is 20mV, about 10 min. after power supply ON.
	R channel Connect voltmeter to TP3 (−) and TP4 (+)	VR304	

2. Fluorescent peak power meter

Setting

- Connect a low frequency oscillator to the tuner input terminal, and 8-ohm load resistor and AC electronic voltmeter to the speaker terminal.
- Add 1kHz signal from the low frequency oscillator to the set.
- Set the sound volume to the maximum point.

Item	Meter range select switch position	VR adjusted	Adjustment
Peak-power indicators	Range switch ... X0.01	VR702 (L ch) VR701 (R ch)	1. Adjust the input level so that the AC voltmeter indicates 2 volts. 2. Adjust the semi-fixed variable resistors VR702 (L ch.) and VR701 (R ch.) so that the 50W segment of FL meter lights up dimly. (Fig. 19)

3. Check points

● DC balance

① Make the sound volume minimum.
② Connect DC voltmeter and 8Ω load to speaker terminal.
③ Make sure that output voltage is within ±30mV.

● Overload detection circuit

① Connect 8Ω load to "main" speaker terminal and 5W 0.33Ω resistance to "remote" speaker terminal.
② Apply 1kHz 40mV signal to "TUNER" terminal.
③ Make the sound volume maximum.
④ With speaker selector set at main and remote, make sure that relay in the set is OFF and no output is delivered.

*** If protection relay turns OFF due to overload, the circuit and load will not restore their normal conditions unless power supply is once turned OFF and again turned ON.**

■ MESSUNGEN UND JUSTIERUNGEN ——— Deutsch

1. Belastungsimpedanz-Detektor und ICQ

● Einstellungen und verwendete Instrumente

1. Betriebsschalter . . . . . "straight DC"
2. Lautsprecher-Wahlschalter . . . . "main"
3. Lautstärke . . . . . 0 (Minimum)
4. Gleichstrom-Voltmeter (zum Messen von 4mV geeignet)
5. Instrumente für die Schaltungsbetrieb-Prüfung (Wechselstrom-Voltmeter, 1kHz-Oszillator, 8Ω-Belastung, 5W 0,33Ω-Widerstand, 1/2W 6,5Ω oder 3,3Ω & 3,3Ω ±5%)

Gegenstand	Anschluß des Voltmeters	Zu justierender Drehwiderstand	Justierung
Justierung der Belastungsimpedanz-Detektorschaltung	*Eine Last mit 6,5Ω (1/2W Kohlewiderstand) oder in Serie geschalteten 3,3Ω und 3,3Ω (1/2W, ±5%) an den "main" Lautsprecheranschluß anschließen. (Abb. 18) *Ein Gleichstrom-Voltmeter zwischen TP401 und dem Chassis, anshließen.	VR402	* TP402 mit dem TP404 verbinden. *VR401 and VR402 vorher bis zum Anschlag entgegen dem Uhrzeigersinn drehen. *VR402 so justieren, daß die Spannung an TP401 –0,1V beträgt. *VR401 so justieren, daß die Spannung an TP402 0V beträgt.
	*Eine Last mit 6,5Ω (1/2W Kohlewiderstand) oder in Serie geschalteten 3,3Ω und 3,3Ω (1/2W, ±5%) an den "main" Lautsprecheranschluß anschließen. (Abb. 18) *Ein Gleichstrom-Voltmeter zwischen TP403 und dem Chassis, anshließen.	VR401	
Justierung von ICQ	Linker Kanal Voltmeter an TP1 (+) und TP2 (–) anschließen.	VR303	① VR303 und VR304 vorher bis zum Anschlag entgegen dem Uhrzeigersinn drehen. ② VR303 (linker Kanal) und VR304 (rechter Kanal) so justieren, daß die Spannung, ca. 10 Minuten nach dem Einschalten der Stromzufuhr, 20mV beträgt.
	Rechter Kanal Voltmeter an TP3 (–) und TP4 (+) anschließen.	VR304	

2. Spitzenwertanzeigen

Einstellung:

- Einen Niederfrequenzoszillator an die Eingangsklemme des Tuners schließen und parallel zu 8-ohm Belastungswiderstand den elektronischen Wechselstrom-Voltmeter an die Lautsprecherklemme schließen.
- 1 kHz Signal aus dem Niederfrequenzoszillator in das Gerät speisen.
- Lautstärkeregler auf den minimalen Punkt einstellen.

Gegenstand	Stellung des Meterbereichswählers	Zu justierender widerstand	Justierung
Spitzenwertanzeigen	Bereichswähler auf X0.01	VR702 (Linker Kanal) VR701 (Rechter K.)	1. Den Eingangspegel so justieren, daß der Wechselstrom-Voltmeter 2,0V anzeigt. 2. Die halbfest eingestellten Widerstände VR702 (linker Kanal) und VR701 (rechter Kanal) so einstellen, daß das 50W'-Segment des Fluoreszenz-Aussteuerungsinstru-mentes schwach aufleuchtet. (Abb. 19)

3. Prüfpunkte

● Gleichstrom-Balance

① Den Lautstärkeregler ganz zudrehen.
② Das Gleichstrom-Voltmeter und eine 8Ω-Last an den Lautsprecheranschluß anschließen.
③ Überprüfen, daß die Ausgangsspannung innerhalb ±30mV liegt.

● Überbelastungs-Detektorschaltung

① Eine 8Ω-Last an den "main"-Lautsprecheranschluß und einen 5W, 0,33Ω-Widerstand an den "remote"-Lautsprecheranschluß anschließen.
② Ein Signal von 1kHz, 40mV an den "TUNER"-Anschluß anlegen.
③ Den Lautstärkeregler ganz aufdrehen.
④ Mit auf "main and remote" eingestelltem Lautsprecher-Wahlschalter überprüfen, daß das Relais ausgeschaltet ist, und keine Ausgangsleistung ausgegeben wird.

* **Nachdem das Schutzrelais aufgrund von Überbelastung ausgeschaltet wurde, muß der Netzschalter einmal aus- und wieder eingeschaltet werden, damit die Schaltung und die Last wieder in ihren normalen Zustand versetzt werden.**

■ MESURAGES ET REGLAGES — Français

1. Détection d'impédance de charge et ICQ

- **Réglages et appareils utilisés**

1. Commutateur de commande . . . . . C.C. normal
2. Sélecteur de haut-parleurs . . . . . principal (main)
3. Volume sonore . . . . . 0 (minimum)
4. Voltmètre à C.C. (capable de mesurer 4mV)
5. Appareils pour la vérification du fonctionnement du circuit. (Voltmètre à C.A., oscillateur de 1kHz, charge de 8Ω, résistance de 5W 0,33Ω, 1/2W 6,5Ω ou 3,3Ω et 3,3Ω ±5%)

Article	Branchement du voltmètre à C.C.	VR à régler	Réglage
Réglage du circuit de détection d'impédance de charge.	*Mettre en circuit une charge avec 6,5Ω (résistance à couche de carbone de 1/2W) ou un montage en série de 3,3Ω et 3,3Ω (1/2W, ±5%) à la prise du haut-parleur "principal". (Fig. 18) *Brancher un voltmètre à C.C. entre TP401 et le châssis.	VR402	*Connecter TP402 et TP404. *Tourner préalablement complètement dans le sens inverse des aiguilles d'une montre VR401 et VR402. *Régler VR402 de façon à ce que la tension de TP401 soit de −0.1V. *Régler VR401 de façon à ce que la tension de TP402 soit de 0V.
	*Mettre en circuit une charge avec 6,5Ω (résistance à couche de carbone de 1/2W) ou un montage en série de 3,3Ω et 3,3Ω (1/2W, ±5%) à la prise du haut-parleur "principal". (Fig. 18) *Brancher un voltmètre à C.C. entre TP403 et le châssis.	VR401	
Réglage de ICQ	Canal de gauche Brancher le voltmètre à TP1 (+) et TP2 (−).	VR303	① Tourner préalablement complètement dans le sens inverse des aiguilles d'une montre VR303 et VR304. ② Régler VR303 (canal de gauche) et VR304 (canal de droite) de façon à ce que la tension soit de 20mV, environ 10 minutes après la mise en marche de la tension d'alimentation.
	Canal de droite Brancher le voltmètre à TP3 (−) et à TP4 (+).	VR304	

2. Indicateurs de puissance de crête fluorescents

Réglage:

- Brancher un oscillateur à basse fréquence à la borne de sortie du tuner et une résistance de charge de 8 ohms et un voltmétre électronique à la borne de l'enceinte.
- Par l'oscillateur à basse fréquence, appliquer un signal de 1 kHz à l'appareil.
- Régler le volume du son au maximum.

Article	Position du commutateur de sélection de la gamme du compteur	VR à régler	Réglage
Indicateurs de puissance de crête fluorescents	Commutateur de gamme X0,01	VR702 (CG) VR701 (CD)	1. Régler le niveau de sortie de telle sorte que la voltmétre CA indique 2,0V. 2. Régler les résistances variables semi-fixes VR702 (canal de gauche) et VR701 (canal de droite), de façon à ce que le segment de 50W de l'appareil de mesure FL s'éclaire faiblement. (Fig. 19)

3. Points de vérification

- **Compensation du C.C.**

① Diminuer le volume sonore au minimum.
② Brancher le voltmètre à C.C. et une charge de 8Ω à la prise de haut-parleurs.
③ S'assurer que la tension de sortie est en deçà de ±30mV.

- **Circuit de détection d'une surcharge**

① Connecter une charge de 8Ω à la prise de haut-parleurs "principale" ("main") et une résistance de 5W 0,33Ω à la prise de haut-parleurs "auxiliaire" ("remote").
② Appliquer un signal de 1kHz 40mV à la borne du "TUNER".
③ Augmenter le volume sonore au maximum.
④ Avec le sélecteur de haut-parleurs réglé sur "main" (principal) et sur "remote" (auxiliaire), s'assurer que le relais dans l'appareil soit mis hors circuit et qu'aucune sortie ne soit livrée.

*** Si le relais de protection est mis hors circuit à cause d'une surcharge, le circuit et la charge ne récupéreront pas leurs conditions normales à moins que l'alimentation secteur soit une fois mise hors circuit et remise à nouveau en marche.**

■ MEDICIONES Y AJUSTES — Español

1. Detección de impedancia de carga y corriente de reposo de transistor de potencis (I_{CQ})

- **Puesta e instrumentos usados**

1. Interruptor de operación . . . . CC lineal
2. Selector de altavoz . . . . . principal
3. Volumen de sonido . . . . . 0 (mínimo)
4. Voltímetro de CC (capaz de medir 4mV)
5. Instrumentos para verificación de operación de circuito (Voltímetro de CA, oscilador 1kHz, carga 8Ω, resistor 5W 0,33Ω, 1/2W 6,5Ω ó 3,3Ω y 3,3Ω)

Item	Conexión de voltímetro de CC	RV ajustado	Procedimiento de ajuste
Ajuste del circuito de detección de impedancia de carga	*Conectar una carga con 6,5Ω (resistor de carbón de 1/2W) ó 3,3Ω y 3,3Ω (1/2W, ±5%), conectados en serie, al terminal del altavoz "principal". (Fig. 18) *Conectar un voltímetro de CC entre TP401 y TP403.	VR402	*Conectar TP402 y TP404 *Girar completamente VR402 y VR402 a la izquierda de antemano. *Ajustar VR402 de manera que el voltaje de TP401 sea −0,1V. *Ajustar VR401 de manera que el voltaje de TP402 sea 0V.
	*Conectar una carga con 6,5Ω (resistor de carbón de 1/2W) ó 3,3Ω y 3,3Ω (1/2W, ±5%), conectados en serie, al terminal del altavoz "principal". (Fig. 18) *Conectar un voltímetro de CC entre TP403 y TP403.	VR401	
Ajuste de I_{CQ}	Canal I Conectar voltímetro a TP1 (+) y TP2 (−)	VR303	① Girar completamente VR301 y VR304 a la izquierda de antemano ② Ajustar VR303 (canal I) y VR304 (canal D) de manera que el voltaje sea 20mV, unos 10 min. después de conectar el suministro de energía.
	Canal D Conectar voltímetro a TP3 (−) y TP4 (+)	VR304	

2. Medidor fluorescente de potencia de cresta

Puesta

- Conectar un oscilador de baja frecuencia al terminal de entrada de sintonizador, y el resistor de carga 8-ohmios y voltímetro electrónico de CA al terminal del altavoz.
- Añadir señal 1kHz del oscilador de baja frecuencia al aparato.
- Poner el volumen de sonido al punto máximo.

Item	Posición de interruptor selector de gama de medidor	RV ajustado	Procedimiento de ajuste
Indicadores de potencia-cresta	Interruptor de gama ... X0.01	VR702 (Canal I) VR701 (Canal D)	1. Ajustar el nivel de entrada de manera que el voltímetro de CA indique 2 voltios. 2. Ajustar los resistores variables semifijos VR702 (C.I.) y VR701 (C.D.) de manera que el segmento de 50W del medidor FI se ilumine débilmente (Fig. 19)

3. Puntos de verificación

- **Equilibrio de CC**

① Hacer el volumen de sonido mínimo.
② Conectar el voltímetro de CC y carga de 8Ω al terminal del altavoz.
③ Asegurarse de que el voltaje de salida esté dentro de ±30mV.

- **Circuito de detección de sobrecarga**

① Conectar la carga de 8Ω al terminal del altavoz "principal" (main) y la resistencia de 5W 0,33Ω al terminal del altavoz "remoto" (remote).
② Aplicar señal de 1kHz 40mV al terminal del "SINTONIZADOR" (TUNER).
③ Hacer el volumen de sonido máximo.
④ Con el selector del altavoz puesto en principal y remoto, asegurarse de que el relé del aparato esté en OFF (desconectado) y no se transmita potencia de salida.

* **Si el relé de protección se desconecta debido a sobrecarga, el circuito y la carga no se repondrán a sus condiciones normales, a no ser que el suministro de energía se desconecte una vez y se conecte de nuevo.**

■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

• Fluorescent peak power meter circuit

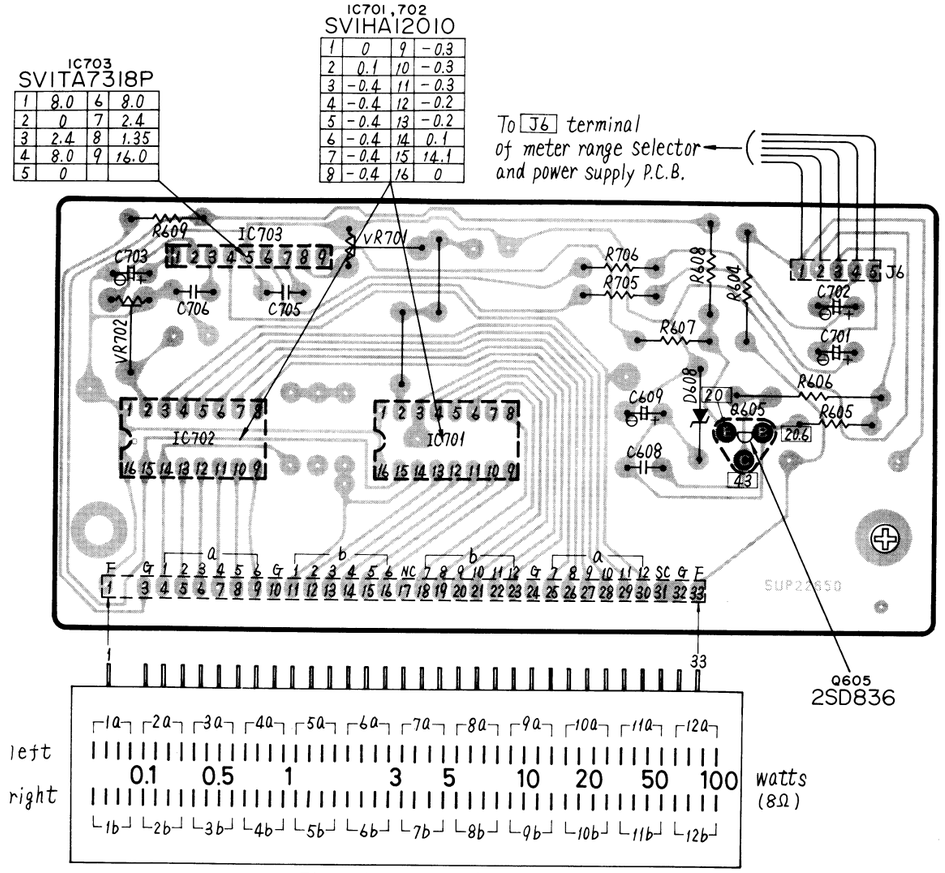
Ground (Earth) circuit

IC703
SVITA7318P

1	8.0	6	8.0
2	0	7	2.4
3	2.4	8	1.35
4	8.0	9	16.0
5	0		

IC701, 702
SVIHA12010

1	0	9	-0.3
2	0.1	10	-0.3
3	-0.4	11	-0.3
4	-0.4	12	-0.2
5	-0.4	13	-0.2
6	-0.4	14	0.1
7	-0.4	15	14.1
8	-0.4	16	0



FL peak power meter

■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

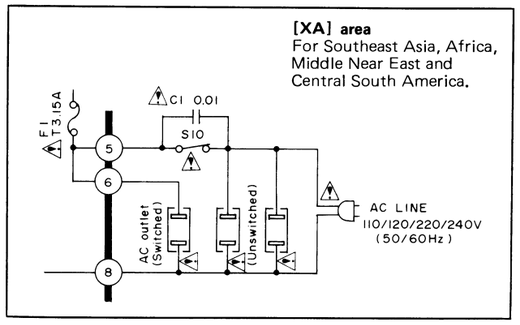
SVINJM4559	AN6552	SVIHA12010	2SK34	2SK170
2SC1384, 2SA684, 2SC1815, 2SA992, 2SC1845, 2SA1015, 2SC2631, 2SA1123	2SK109	2SB549, 2SD415	LN820WP (Orange) LN420WP (Yellow)	SVITA7318P SVITA7317P
	2SA1106, 2SC2581	2SD661		

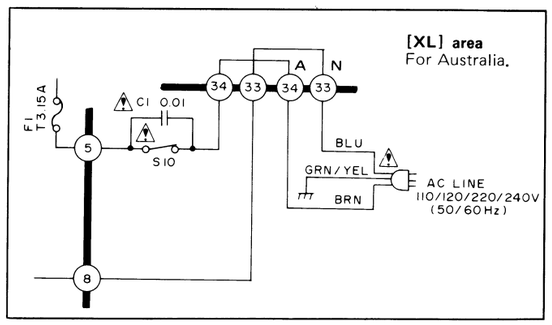
■ NOTES OF SCHEMATIC DIAGRAM

Notes:

1. **S1-1, S1-2:** MM/MC cartridge (phono) selector switch in "**MM**" position.
2. **S2-1, S2-2:** Input selector switch in "**phono**" position. (① aux ⟷ ② tuner ⟷ ③ phono ⟷ ④ tape 1 ⟷ ⑤ tape 2)
3. **S3-1~S3-4:** Recording output selector switch in "**phono**" position. (① aux ⟷ ② tuner ⟷ ③ phono ⟷ ④ off ⟷ ⑤ tape dubbing 1 ▶ 2 ⟷ ⑥ tape dubbing 2 ▶ 1)
4. **S4:** High filter switch in "**off**" position. (off ⟷ 7kHz, −6dB/oct.)
5. **S5:** Loudness switch in "**off**" position.
6. **S6:** Subsonic filter switch in "**off**" position (off ⟷ 30Hz, −6dB/oct.)
7. **S7:** Operation switch in "**straight DC**" position (straight DC ⟷ via tone)
8. **S8:** Meter range selector switch in "**x0.01**" position. (x0.01 ⟷ x1)
9. **S9:** Speakers selector switch in "**main**" position. (① speakers off ⟷ ② main ⟷ ③ remote ⟷ ④ main and remote)
10. **S10:** Power source switch in "**on**" position.
11. **S11:** Voltage selector switch in "**220V**" position. (120V ⟷ 110V ⟷ 220V ⟷ 240V)
12. Same circuit is used for both L and R channels. For the resistance and capacity of R channel (lower of circuit diagram), refer to L channel. For the voltage value, refer to R channel.
13. ☐ Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
    * The voltage values in ☐ are those obtained with speaker selector set at "**main**" and load impedance at "8Ω" or nothing load.
    * Figures in ( ) stand for DC voltage in 4Ω load impedance.
    * Figures in (( )) stand for DC voltage in FL light up condition.
14. ═══ Phono signal lines of left channel
15. ━━▶ Positive (+B) voltage lines.
16. ▪▪▪▶ Negative (−B) voltage lines.
17. Important safety notice:
    Componetns identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

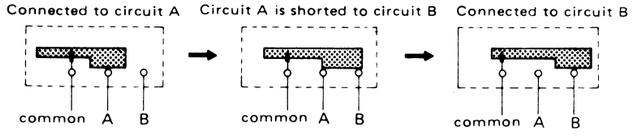
• Power source circuit for [XA] and [XL] area only



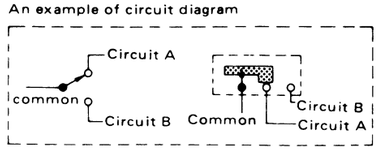


• **Shorting Switch**

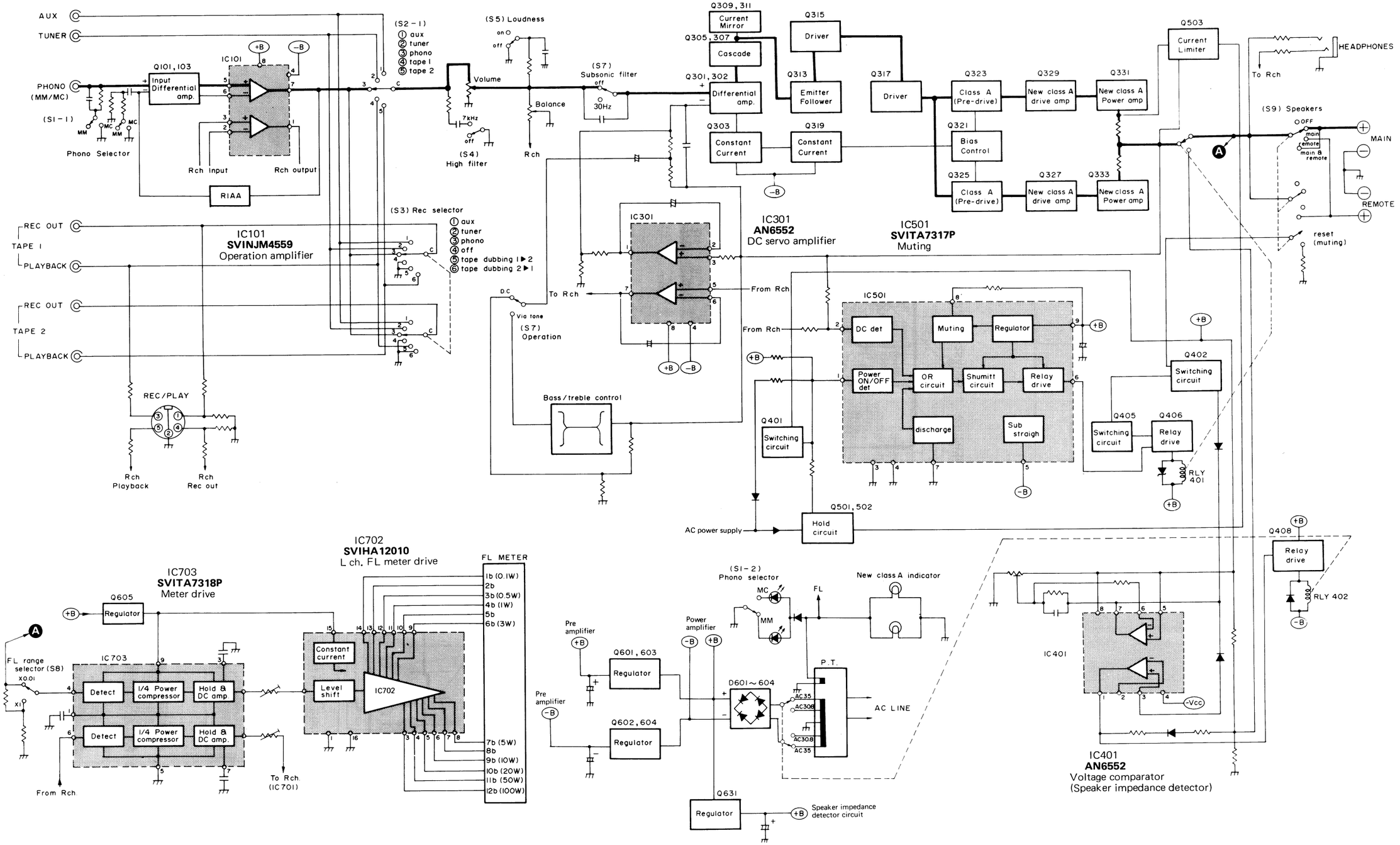
This unit uses a horting switch. As illustated below, the circuit is shorted to the next circuit without being opened.
In the circuit diagram, the shaded area represents the common terminal.



An example of circuit diagram



■ BLOCK DIAGRAM



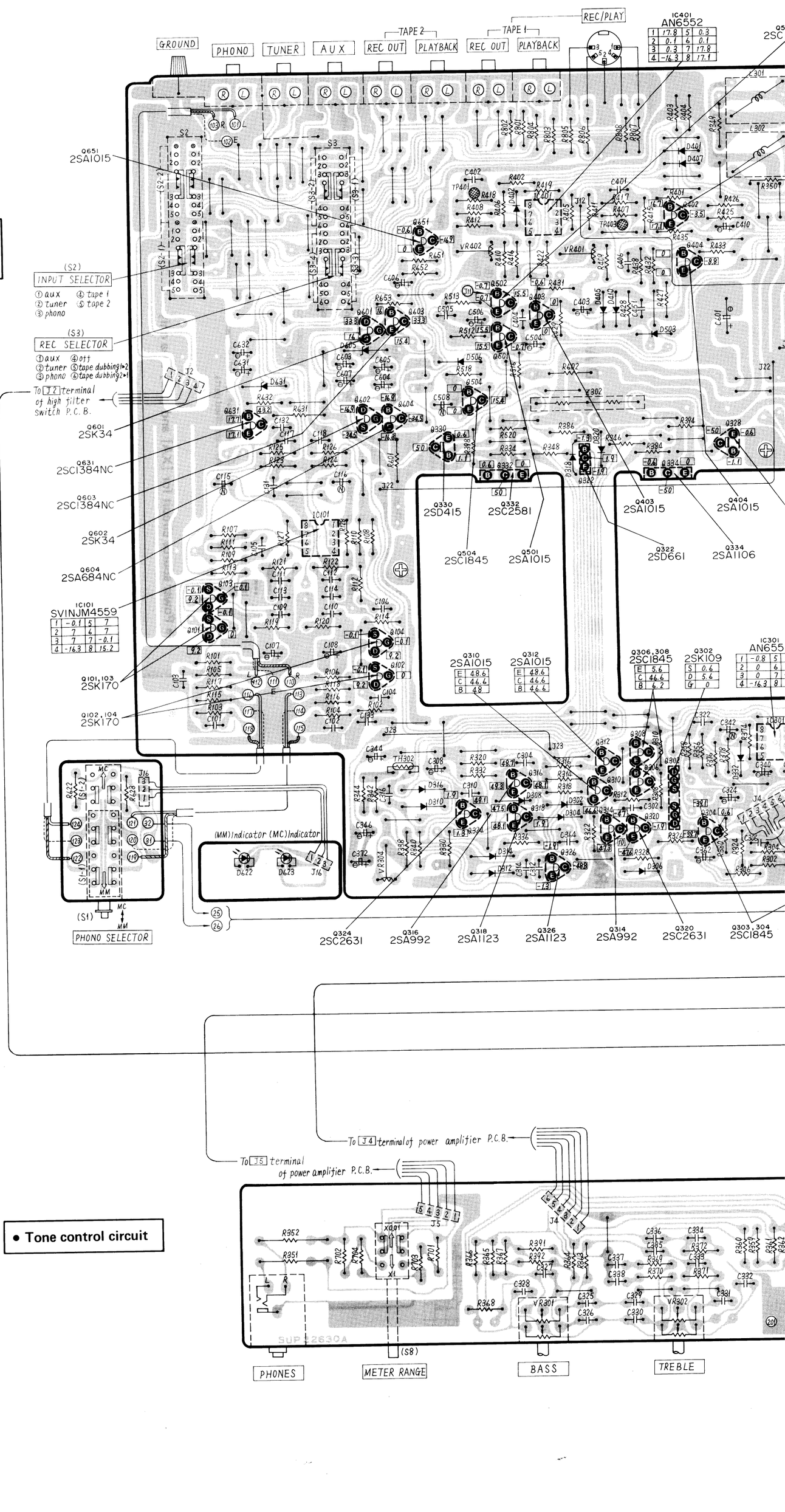
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

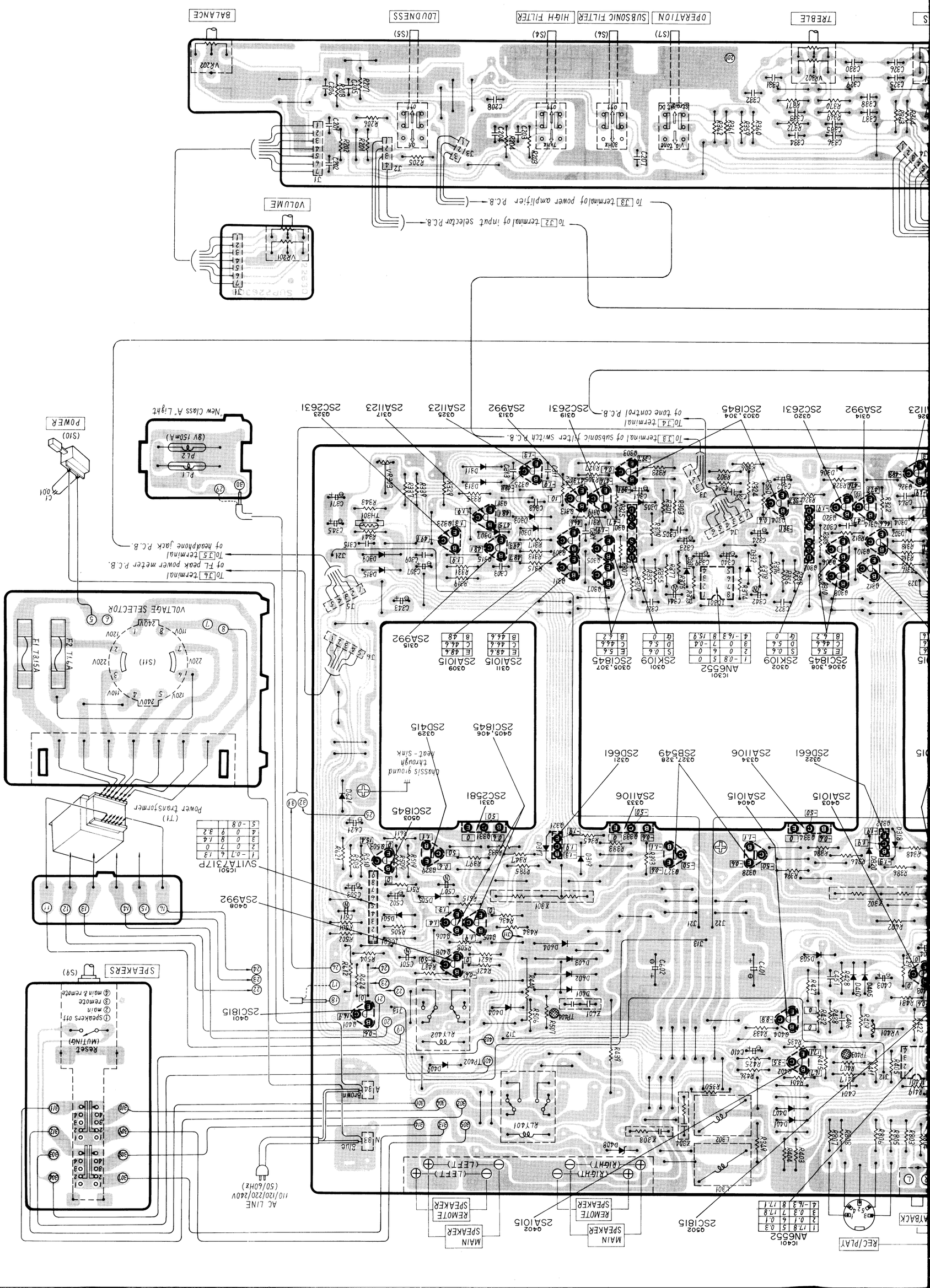
Model **SU-V5**

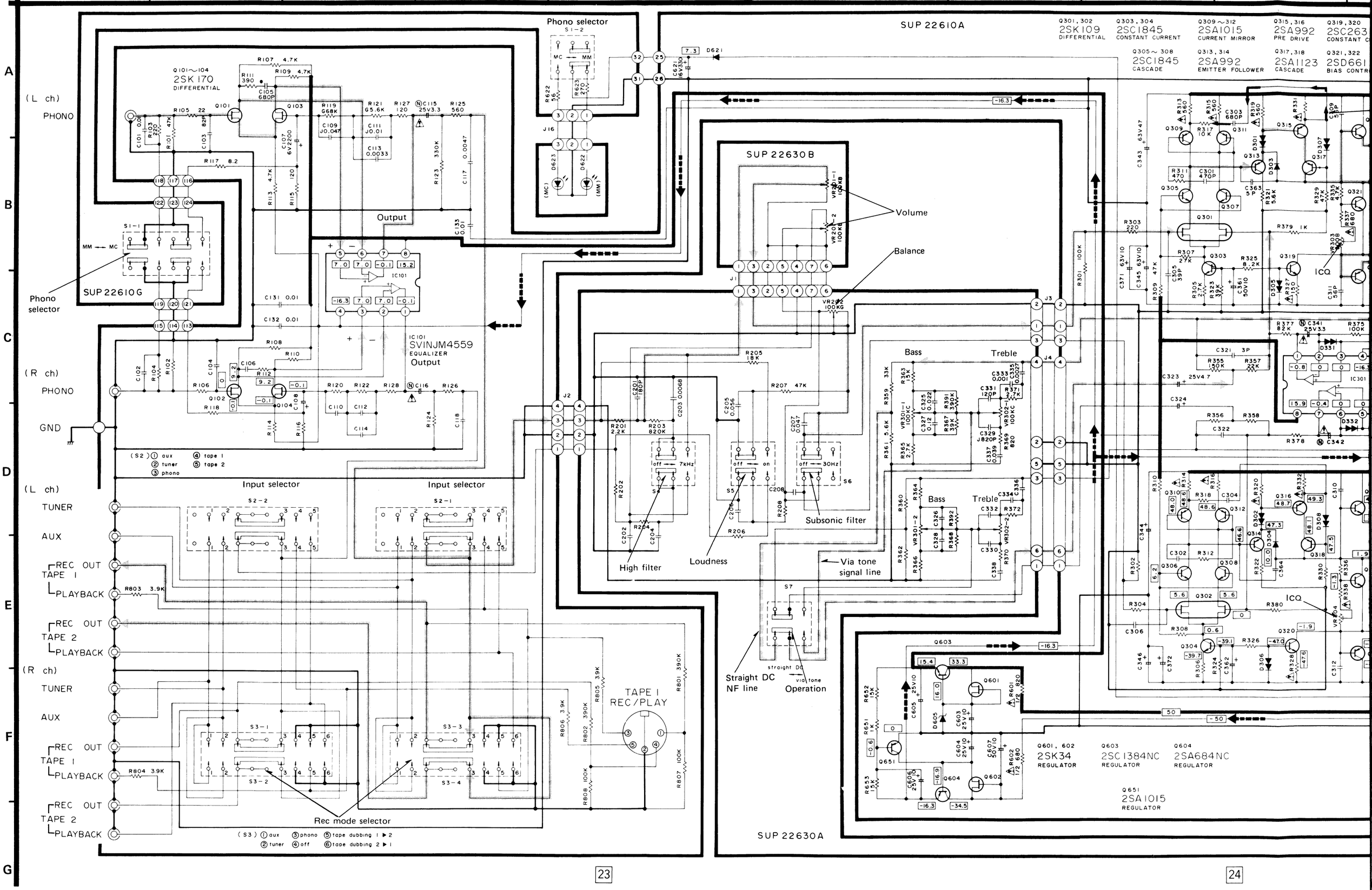
Ground (Earth) lines

- Equalizer, power amplifier, protection and power supply circuits

- Tone control circuit




BALANCE
LOUDNESS
HIGH FILTER
SUBSONIC FILTER
OPERATION
TREBLE
VOLUME
To J2 terminal of input selector P.C.B.
To J3 terminal of power amplifier P.C.B.
To J3 terminal of subsonic filter switch P.C.B.
To J4 terminal of tone control P.C.B.
"New Class A" Light
POWER
VOLTAGE SELECTOR
To J6 terminal of FL peak power meter P.C.B.
To J5 terminal of headphone jack P.C.B.
SPEAKERS
Reset (MUTING)
SPEAKERS off
main
remote
main & remote
Power Transformer (T1)
AC LINE
110/120/220/240V
(50/60Hz)
Chassis ground through heat-sink
REMOTE SPEAKER
MAIN SPEAKER
REC/PLAY
PLAYBACK


SUP 22610A
SUP 22610G
SUP 22630B
SUP 22630A
Phono selector
S1-2
Phono selector
S1-1
(L ch)
PHONO
(R ch)
PHONO
GND
Q101~104
2SK170
DIFFERENTIAL
Output
IC101
SVINJM4559
EQUALIZER
Output
(S2) ① aux ④ tape 1
② tuner ⑤ tape 2
③ phono
Input selector
Input selector
(L ch)
TUNER
AUX
REC OUT
TAPE 1
PLAYBACK
REC OUT
TAPE 2
PLAYBACK
(R ch)
TUNER
AUX
REC OUT
TAPE 1
PLAYBACK
REC OUT
TAPE 2
PLAYBACK
TAPE 1
REC/PLAY
Rec mode selector
(S3) ① aux ③ phono ⑤ tape dubbing 1 ▶ 2
② tuner ④ off ⑥ tape dubbing 2 ▶ 1
Volume
Balance
Bass
Treble
Bass
Treble
High filter
Loudness
Via tone signal line
Subsonic filter
Straight DC NF line
Straight DC via tone Operation
ICQ
ICQ
Q301, 302
2SK109
DIFFERENTIAL
Q303, 304
2SC1845
CONSTANT CURRENT
Q309~312
2SA1015
CURRENT MIRROR
Q315, 316
2SA992
PRE DRIVE
Q319, 320
2SC263
CONSTANT C
Q305~308
2SC1845
CASCADE
Q313, 314
2SA992
EMITTER FOLLOWER
Q317, 318
2SA1123
CASCADE
Q321, 322
2SD661
BIAS CONTR
Q601, 602
2SK34
REGULATOR
Q603
2SC1384NC
REGULATOR
Q604
2SA684NC
REGULATOR
Q651
2SA1015
REGULATOR

SUP 22610A

Q301, 302 2SK109 DIFFERENTIAL	Q303, 304 2SC1845 CONSTANT CURRENT	Q305~308 2SC1845 CASCADE	Q309~312 2SA1015 CURRENT MIRROR	Q313, 314 2SA992 EMITTER FOLLOWER	Q315, 316 2SA992 PRE DRIVE	Q317, 318 2SA1123 CASCADE	Q319, 320 2SC2631 CONSTANT CURRENT	Q321, 322 2SD661 BIAS CONTROL	Q323, 324 2SC2631 CLASS A DRIVE	Q325, 326 2SA1123 CLASS A DRIVE

Q327, 328 2SB549 NEW CLASS A DRIVE	Q329, 330 2SD415 NEW CLASS A DRIVE	Q331, 332 2SC2581 POWER	Q333, 334 2SA1106 POWER	Q503, 504 2SC1845 OVER LOAD DETECT

SUP 22630B

Volume

Balance

Bass

Treble

Subsonic filter

Via tone signal line

straight DC

via tone

Operation

LFB

ICQ

IC301 AN6552 DC SERVO

SPEAKER

MAIN (L ch) REMOTE

MAIN (R ch) REMOTE

Speaker selector

(MUTING)

Reset

S9 (SPEAKERS)
1 Speakers off
2 Main
3 Remote
4 Main & Remote

Q501 2SA1015 HOLD

Q502 2SC1815 HOLD

IC501 SVI MUTING

Bass

Treble

Meter range

HEADPHONES

Q601, 602 2SK34 REGULATOR

Q603 2SC1384NC REGULATOR

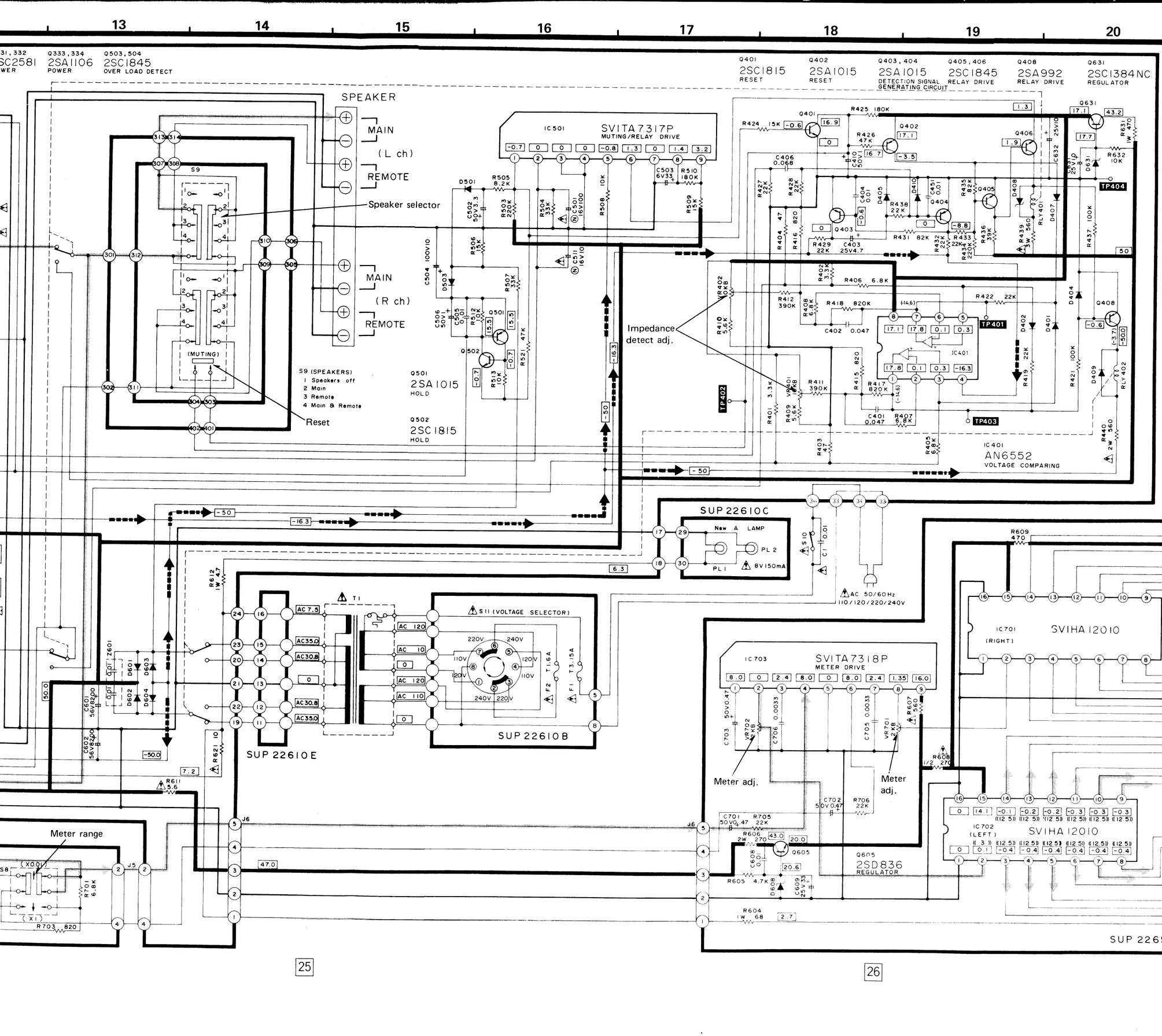
Q604 2SA684NC REGULATOR

Q651 2SA1015 REGULATOR

SUP 22610E

SUP 22610B

SUP 22630A



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

Refer to notes on page 18.

● **Part number of diodes**

Diode Ref. No.	Production Part No.	Standardized Part No.
D301, 302	SVDMA26-2	MA27A2
D303, 304	MA162A	←
D305~308	SVDMA26-2	MA27A2
D309~D316	OA90	20A90
D317~D320	SVDMA26-2	MA27A2
D331, 332	SVDMA26-2	MA27A2
D401, 402, 404, 405, 407, 409, 410	MA150	MA162A
D408	SVDMZ422	RVD1N4748
D501, 503	MA150	MA162A
D505, 506	MA162A	←
D601~604	SVDS3V20	SVDS3V40
D605	SVDMZ316B	←
D608	MA1200	←
D621	MA150	MA162A
D622	LN820WP	←
D623	LN420WP	←
D631	MA1180	←

■ REPLACEMENT PARTS LIST

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ -marked parts are used for black only, while ○ marked parts are for silver type only.
4. Parts other than Ⓚ - and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No.: SU-V5 (K)

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101		SVINJM4559DD	IC, Equalizer Amplifier
IC301, 401		AN6552F	IC, DC Servo Relay Driver
IC501		SVITA7317P	IC, Muting
IC701, 702		SVIHA12010	IC, FL Meter Driver
IC703		SVITA7318P	IC, FL Meter Driver
TRANSISTORS			
Q101~104		2SK170–GR	Transistor, Input Differential
Q301, 302		2SK109–D	Transistor, Differential
Q303~308, 405, 406, 503, 504		2SC1845	Transistor, Current Mirror, Switching Relay Drive
Q309~312, 402~404, 501, 651		2SA1015–Y	Transistor, Current Mirror, Switching Hold Circuit
Q313~316, 408		2SA992	Transistor, Emitter Follower, Drive
Q317, 318		2SA1123–R	Transistor, Drive
Q319, 320		2SC2631–R	Transistor, Constant Current
Q321, 322		2SD661–S	Transistor, Bias Control
Q323, 324		2SC2631–R	Transistor, Pre Driver } Use in pair ranks
Q325, 326		2SA1123–R	Transistor, Pre Driver }
Q327, 328		2SB549–Q	Transistor, Driver } Use in pair ranks
Q329, 330		2SD415–Q	Transistor, Driver }
Q331, 332		2SC2581–Y	Transistor, Power } Use in pair ranks
Q333, 334		2SA1106–Y	Transistor, Power }
Q401, 502		2SC1815–Y	Transistor, Switching, Hold Circuit
Q601, 602		2SK34–D1	Transistor, Regulator
Q603, 631		**2SC1384AR**	Transistor, Regulator
Q604		**2SA684–QNC**	Transistor, Regulator
Q605		2SD836–Q	Transistor, Regulator
DIODES			
D301, 302, 305~308, 317~320, 331, 332		**MA27A2**	Diode, Bias Supply,
D303, 304, 401, 402, 404, 405, 407, 409, 410, 501, 503, 505, 506, 621		**MA162A**	Diode, Bias Supply, Protection Circuitry
D309~316		**20A90**	Diode, Synchronism Bias
D408		**RVD1N4748**	Diode, 22V Zener
D601~604	⚠	**SVDS3V40**	Rectifier
D605		SVDMZ316B	Diode, 16V Zener
D608		MA1200	Diode, 20V Zener
D622		LN420WP	Light Emiting Diode
D623		LN820WP	Light Emiting Diode
D631		MA1180	Diode, 18V Zener
COLIS and TRANSFORMER			
L301, 302		SLQY15G–30	Coil, Choke
T1	⚠	SLT5N363	Transformer, Power Source
T1 [EK] only	⚠	SLT5N373	Transformer, Power Source
VARIABLE RESISTORS			
VR201		EWJGFA066B15	Volume Control, 100kΩ (B)
VR202		EWHHMA541G15	Balance Control, 100kΩ (B)
VR301		EWGJCY067530	Bass Control
VR302		EWGJC0067C15	Treble Control, 100kΩ (C)
VR303, 304		EVNK6AA00B52	ICQ Adjustment, 500Ω (B)
VR401, 402		EVNK6AA00B14	Load Impedance, Detect Adjustment, 10kΩ(B)
VR701, 702		EVNK6AA00B23	FL Meter Level Adjustment, 2kΩ (B)
THERMISTERS			
TH301, 302		ERTD2ZHL103S	Thermister, Thermal Compensation 10kΩ

Ref. No.		Part No.	Part Name & Description
COMPONENT COMBINATIONS			
Z301, 302	⚠	ERF3GBKR22N	Component Combination, 3W 0.22Ω (x2)
Z303, 304		ECQJ0517	Component Combination, 0.047μF, 10Ω
Z601		SXRFS203ZSM	Component Combination, 0.01μF, (x2)
FUSES			
F1	⚠	XBA2C31TR0	Fuse, T3.15A (250V)
F2	⚠	XBA2C16TR0	Fuse, T1.6A (250V)
RELAYS			
RLY401	⚠	SSY99	Relay, Speaker Protection
RLY402	⚠	SSY101	Relay, Transformer Tap Select of Secondary
FLUORESCENT DISPLAY TUBE			
FL		SADBG89Z	Fluorescent Display Tube
SWITCHES			
S1		SSH1009	Switch, Phono Selector
S2, 3		ESA2682	Switch, Input and Rec Selector
S4, 6, 7		SSH3019	Switch, High Filter, Subsonic Filter and Operation
S5, 8		SSH197	Switch, Loudness Control and FL Range Selector
S9		SSR167	Switch, Speaker Selector
S10	⚠	ESB90259S	Switch, Power Source
S11	⚠	ESE37219	Switch, Voltage Selector
LAMPS			
PL1, 2	⚠	XAMR81S10	Lamp, New Class A 150mA (8V)
RESISTORS			
R101, 102		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ±5%
R103, 104		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ±5%
R105, 106		**ERD25FJ220**	Carbon, 1/4W, 22Ω, ±5%
R107, 108		ERO25CKF4701	Metal Film, 1/4W, 4.7kΩ, ±1%
R109, 110		ERO25CKF4701	Metal Film, 1/4W, 4.7kΩ, ±1%
R111, 112		**ERD25FJ391**	Carbon, 1/4W, 390Ω, ±5%
R113, 114		ERO25CKF4701	Metal Film, 1/4W, 4.7kΩ, ±1%
R115, 116		**ERD25FJ121**	Carbon, 1/4W, 120Ω, ±5%
R117, 118		**ERD25FJ8R2**	Carbon, 1/4W, 8.2Ω, ±5%
R119, 120		**ERO25CKF6802**	Metal Film, 1/4W, 68kΩ, ±1%
R121, 122		**ERO25CKF5601**	Metal Film, 1/4W, 5.6kΩ, ±1%
R123, 124		**ERD25TJ334**	Carbon, 1/4W, 330kΩ, ±5%
R125, 126		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ±5%
R127, 128		**ERD25FJ121**	Carbon, 1/4W, 120Ω, ±5%
R201, 202		**ERD25FJ222**	Carbon, 1/4W, 2.2kΩ, ±5%
R203, 204		**ERD25TJ824**	Carbon, 1/4W, 820kΩ, ±5%
R205, 206		**ERD25TJ183**	Carbon, 1/4W, 18kΩ, ±5%
R207, 208		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ±5%
R301, 302		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
R303, 304		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ±5%
R305, 306		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ±5%
R307, 308		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ±5%
R309, 310		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ±5%
R311, 312		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ±5%
R313, 314	⚠	**ERD25FJ561**	Carbon, 1/4W, 560Ω, ±5%
R315, 316	⚠	**ERD25FJ561**	Carbon, 1/4W, 560Ω, ±5%
R317, 318		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ±5%
R319, 320	⚠	**ERD25FJ561**	Carbon, 1/4W, 560Ω, ±5%
R321, 322		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ±5%
R323, 324		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ±5%
R325, 326		**ERD25FJ822**	Carbon, 1/4W, 8.2kΩ, ±5%
R327, 328	⚠	**ERD25FJ101**	Carbon, 1/4W, 100Ω, ±5%

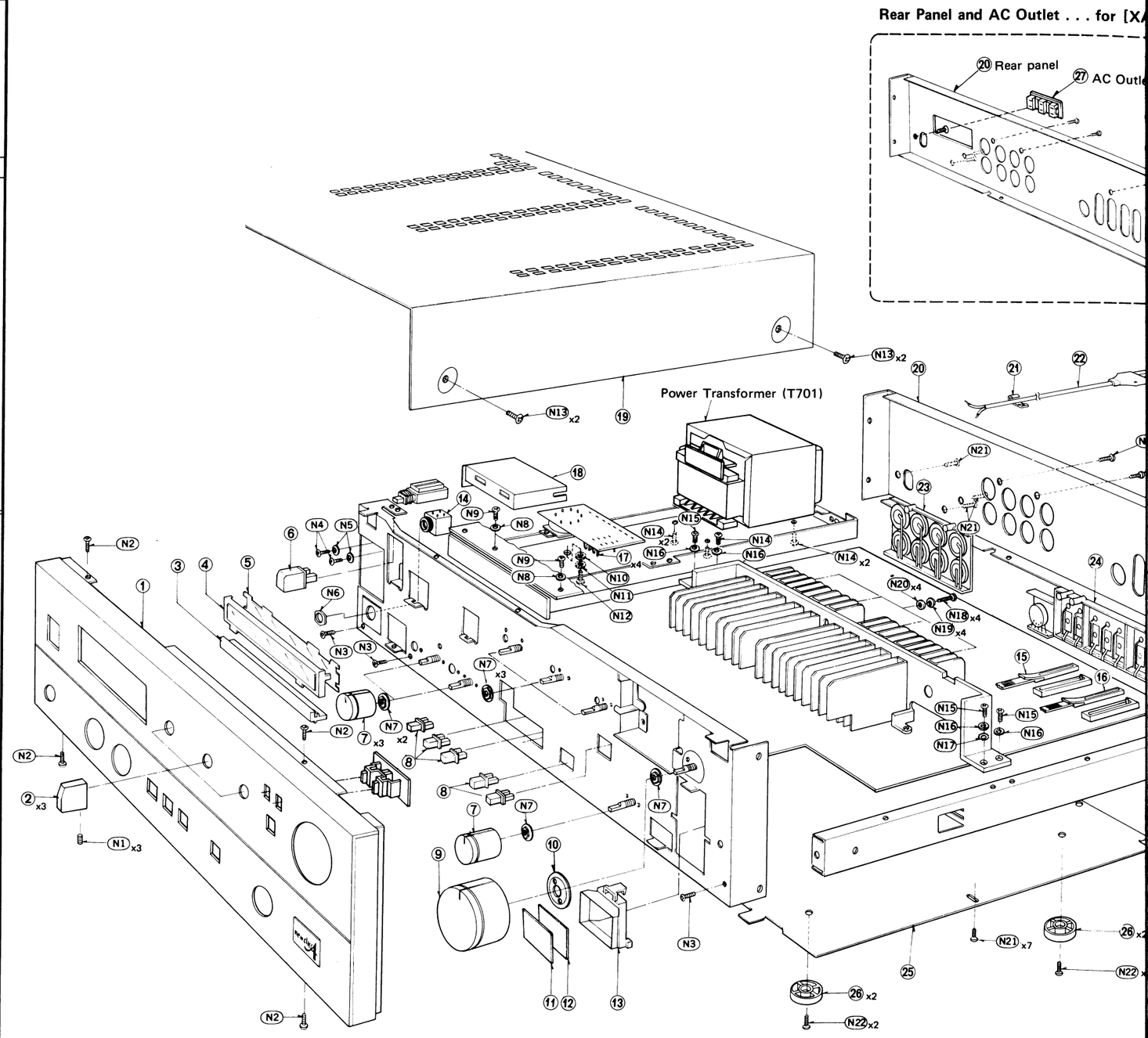
Ref. No.		Part No.	Part Name & Description
R329, 330		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ±5%
R331, 332	⚠	**ERD25FJ560**	Carbon, 1/4W, 56Ω, ±5%
R333, 334	⚠	**ERD25FJ100**	Carbon, 1/4W, 10Ω, ±5%
R335, 336		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ±5%
R337, 338	⚠	**ERD25FJ681**	Carbon, 1/4W, 680Ω, ±5%
R339, 340	⚠	**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ±5%
R341, 342	⚠	**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ±5%
R343, 344		**ERD25TJ823**	Carbon, 1/4W, 82kΩ, ±5%
R345, 346		**ERD25TJ124**	Carbon, 1/4W, 120kΩ, ±5%
R347, 348		**ERD25TJ124**	Carbon, 1/4W, 120kΩ, ±5%
R349, 350	⚠	**ERD50FJ100**	Carbon, 1/2W, 10Ω, ±5%
R351, 352		**ERG2ANJ331**	Metal Oxide, 2W, 330Ω, ±5%
R355, 356		**ERD25TJ154**	Carbon, 1/4W, 150kΩ, ±5%
R357, 358		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R359, 360		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ±5%
R361, 362		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ±5%
R363, 364		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ±5%
R365, 366		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ±5%
R367, 368		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ±5%
R369, 370		**ERD25FJ821**	Carbon, 1/4W, 820Ω, ±5%
R371, 372		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ±5%
R373, 374		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
R375, 376		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
R377, 378		**ERD25TJ823**	Carbon, 1/4W, 82kΩ, ±5%
R379, 380		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ±5%
R383, 384	⚠	**ERD25FJ680**	Carbon, 1/4W, 68Ω, ±5%
R385, 386	⚠	**ERD25FJ331**	Carbon, 1/4W, 330Ω, ±5%
R391, 392		**ERD25TJ394**	Carbon, 1/4W, 390kΩ, ±5%
R393, 394	⚠	**ERD25FJ3R3**	Carbon, 1/4W, 3.3Ω, ±5%
R397, 398	⚠	**ERD25FJ3R3**	Carbon, 1/4W, 3.3Ω, ±5%
R401, 402		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ±5%
R403, 404		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ±5%
R405, 406		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ±5%
R407, 408		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ±5%
R409, 410		**ERD25FJ562**	Carbon, 1/4W, 5.6kΩ, ±5%
R411, 412		**ERD25TJ394**	Carbon, 1/4W, 390kΩ, ±5%
R415, 416		**ERD25FJ821**	Carbon, 1/4W, 820Ω, ±5%
R417, 418		**ERD25TJ824**	Carbon, 1/4W, 820kΩ, ±5%
R419		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R421		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
R422		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R424		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ±5%
R425		**ERD25TJ184**	Carbon, 1/4W, 180kΩ, ±5%
R426		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ±5%
R427, 428		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R429		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R431		**ERD25TJ823**	Carbon, 1/4W, 82kΩ, ±5%
R432, 433		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R434		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ±5%
R435		**ERD25TJ823**	Carbon, 1/4W, 82kΩ, ±5%
R436		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ±5%
R437		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
R438		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R439		**ERG3ANJ561**	Metal Oxide, 3W, 560Ω, ±5%
R440		**ERG2ANJ561**	Metal Oxide, 2W, 560Ω, ±5%
R501		**ERD25TJ124**	Carbon, 1/4W, 120kΩ, ±5%
R502		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
R503		**ERD25TJ224**	Carbon, 1/4W, 220kΩ, ±5%
R504		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ±5%
R505		**ERD25FJ822**	Carbon, 1/4W, 8.2kΩ, ±5%
R506		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ±5%
R507		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ±5%
R508		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ±5%
R509		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ±5%
R510		**ERD25TJ184**	Carbon, 1/4W, 180kΩ, ±5%
R512, 513		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ±5%
R515, 516		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R517, 518	⚠	**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ±5%
R519, 520	⚠	**ERD25FJ391**	Carbon, 1/4W, 390Ω, ±5%
R521		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ±5%
R601	⚠	**ERD50FJ821**	Carbon, 1/2W, 820Ω, ±5%
R602	⚠	**ERD50FJ681**	Carbon, 1/2W, 680Ω, ±5%
R604		**ERG1ANJ680**	Metal Oxide, 1W, 68Ω, ±5%
R605		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ±5%
R606		**ERG2ANJ271**	Metal Oxide, 2W, 270Ω, ±5%
R607	⚠	**ERD25FJ561**	Carbon, 1/4W, 560Ω, ±5%
R608	⚠	**ERD50FJ271**	Carbon, 1/2W, 270Ω, ±5%
R609		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ±5%
R611	⚠	**ERD25FJ5R6**	Carbon, 1/4W, 5.6Ω, ±5%
R612		**ERX1ANJ4R7**	Metal Film, 1W, 4.7Ω, ±5%
R621	⚠	**ERD25FJ100**	Carbon, 1/4W, 10Ω, ±5%
R622		**ERD25FJ560**	Carbon, 1/4W, 56Ω, ±5%
R623		**ERD25FJ271**	Carbon, 1/4W, 270Ω, ±5%

Ref. No.		Part No.	Part Name & Description
R631		**ERG1ANJ471**	Metal Oxide, 1W, 470Ω, ±5%
R632		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ±5%
R651		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ±5%
R652, 653		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ±5%
R701, 702		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ±5%
R703, 704		**ERD25FJ821**	Carbon, 1/4W, 820Ω, ±5%
R705, 706		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R801, 802		**ERD25TJ394**	Carbon, 1/4W, 390kΩ, ±5%
R803, 804		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ±5%
R805, 806		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ±5%
R807, 808		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
CAPACITORS			
C1	⚠	ECKDKC103PF	Ceramic, 400VAC, 0.01μF, +100%
C101, 102		ECQM1H103KZ	Polyester, 50V, 0.01μF, ±10%
C103, 104		ECCD1H820K	Ceramic, 50V, 82pF, ±10%
C105, 106		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C107, 108		**ECEA0JS222**	Electrolytic, 6.3V, 2200μF
C109, 110		ECQM1H473JZ	Polyester, 50V, 0.047μF, ±5%
C111, 112		ECQM1H103JZ	Polyester, 50V, 0.01μF, ±5%
C113, 114		ECQM1H332KZ	Polyester, 50V, 0.0033μF, ±10%
C115, 116	⚠	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3μF
C117, 118		ECQM1H472KZ	Polyester, 50V, 0.0047μF, ±10%
C131, 132		ECKD1H103ZF	Ceramic, 50V, 0.01μF, +80-20%
C133		ECKD1H103ZF	Ceramic, 50V, 0.01μF, +80-20%
C201, 202		ECCD1H181K	Ceramic, 50V, 180pF, ±10%
C203, 204		ECQM1H682KZ	Polyester, 50V, 0.0068μF, ±10%
C205, 206		ECQM1H563KZ	Polyester, 50V, 0.056μF, ±10%
C207, 208		ECQM1H473KZ	Polyester, 50V, 0.047μF, ±10%
C301, 302		ECKD1H471KB	Ceramic, 50V, 470pF, ±10%
C303, 304		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C305, 306		ECCD1H390K	Ceramic, 50V, 39pF, ±10%
C307, 308		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF, ±10%
C309, 310		ECCD1H270K	Ceramic, 50V, 27pF, ±10%
C311, 312		ECCD1H270K	Ceramic, 50V, 27pF, ±10%
C313, 314		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C315, 316		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C321, 322		ECCD1H030C	Ceramic, 50V, 3pF, ±0.25pF
C323, 324		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C325, 326		ECQM1H223KZ	Polyester, 50V, 0.022μF, ±10%
C327, 328		ECQM1H124KZ	Polyester, 50V, 0.12μF, ±10%
C329, 330		ECQS1821JZ	Styrol, 125V, 820pF, ±5%
C331, 332		ECCD1H181K	Ceramic, 50V, 180pF, ±10%
C333, 334		ECQM1H102KZ	Polyester, 50V, 0.001μF, ±10%
C335, 336		ECQM1H272KZ	Polyester, 50V, 0.0027μF, ±10%
C337, 338		ECQM1H393KZ	Polyester, 50V, 0.039μF, ±10%
C339, 340		**ECEA50Z1**	Electrolytic, 50V, 1μF
C341, 342	⚠	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3μF
C343, 344		**ECEA1JS470**	Electrolytic, 63V, 47μF
C345, 346		**ECEA1JS100**	Electrolytic, 63V, 10μF
C361, 362		**ECEA1HS100**	Electrolytic, 50V, 10μF
C363, 364		ECCD1H050C	Ceramic, 50V, 5pF, ±0.25pF
C371, 372		**ECEA1JS100**	Electrolytic, 63V, 10μF
C401, 402		ECQM1H473KZ	Polyester, 50V, 0.047μF, ±10%
C403		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C404		ECKD1H103ZF	Ceramic, 50V, 0.01μF, +80-20%
C406		ECQM1H683KZ	Polyester, 50V, 0.068μF, ±10%
C410		**ECEA50Z1**	Electrolytic, 50V, 1μF
C451		ECKD1H103ZF	Ceramic, 50V, 0.01μF, +80-20%
C501		ECEA1CN101S	Non-Polar Electrolytic, 16V, 100μF
C502		**ECEA50Z3R3**	Electrolytic, 50V, 3.3μF
C503		**ECEA1CS330**	Electrolytic, 16V, 33μF
C504		**ECEA2AS100**	Electrolytic, 100V, 10μF
C505		ECKD1H103ZF	Ceramic, 50V, 0.01μF, +80-20%
C506		**ECEA50Z1**	Electrolytic, 50V, 1μF
C507, 508	⚠	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3μF
C511	⚠	ECEA1CN100S	Non-Polar Electrolytic, 16V, 10μF
C601, 602		ECETS56V822U	Electrolytic, 56V, 8200μF
C603, 604		**ECEA1HS100**	Electrolytic, 50V, 10μF
C605, 606		**ECEA1HS100**	Electrolytic, 50V, 10μF
C607		**ECEA1HS100**	Electrolytic, 50V, 10μF
C608		ECKD1H103ZF	Ceramic, 50V, 0.01μF, +80-20%
C609		**ECEA1VS330**	Electrolytic, 35V, 33μF
C621		**ECEA1ES101**	Electrolytic, 25V, 100μF
C631, 632		**ECEA1HS100**	Electrolytic, 50V, 10μF
C701, 702		**ECEA50ZR47**	Electrolytic, 50V, 0.47μF
C703		**ECEA50ZR47**	Electrolytic, 50V, 0.47μF
C705, 706		ECKD1H332KB	Ceramic, 50V, 0.0033μF, ±10%

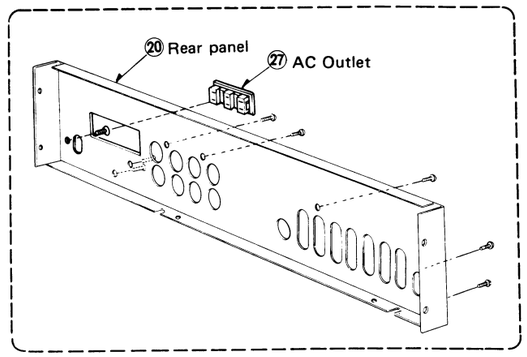
		Part No.	Part Name & Description
		ERD25TJ473	Carbon, 1/4W, 47kΩ, ±5%
	⚠	**ERD25FJ560**	Carbon, 1/4W, 56Ω, ±5%
	⚠	**ERD25FJ100**	Carbon, 1/4W, 10Ω, ±5%
		ERD25FJ472	Carbon, 1/4W, 4.7kΩ, ±5%
	⚠	**ERD25FJ681**	Carbon, 1/4W, 680Ω, ±5%
	⚠	**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ±5%
	⚠	**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ±5%
		ERD25TJ823	Carbon, 1/4W, 82kΩ, ±5%
		ERD25TJ124	Carbon, 1/4W, 120kΩ, ±5%
		ERD25TJ124	Carbon, 1/4W, 120kΩ, ±5%
	⚠	**ERD50FJ100**	Carbon, 1/2W, 10Ω, ±5%
		ERG2ANJ331	Metal Oxide, 2W, 330Ω, ±5%
		ERD25TJ154	Carbon, 1/4W, 150kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
		ERD25TJ333	Carbon, 1/4W, 33kΩ, ±5%
		ERD25FJ562	Carbon, 1/4W, 5.6kΩ, ±5%
		ERD25TJ153	Carbon, 1/4W, 15kΩ, ±5%
		ERD25FJ272	Carbon, 1/4W, 2.7kΩ, ±5%
		ERD25TJ393	Carbon, 1/4W, 39kΩ, ±5%
		ERD25FJ821	Carbon, 1/4W, 820Ω, ±5%
		ERD25FJ272	Carbon, 1/4W, 2.7kΩ, ±5%
		ERD25TJ104	Carbon, 1/4W, 100kΩ, ±5%
		ERD25TJ104	Carbon, 1/4W, 100kΩ, ±5%
		ERD25TJ823	Carbon, 1/4W, 82kΩ, ±5%
		ERD25FJ102	Carbon, 1/4W, 1kΩ, ±5%
	⚠	**ERD25FJ680**	Carbon, 1/4W, 68Ω, ±5%
	⚠	**ERD25FJ331**	Carbon, 1/4W, 330Ω, ±5%
		ERD25TJ394	Carbon, 1/4W, 390kΩ, ±5%
	⚠	**ERD25FJ3R3**	Carbon, 1/4W, 3.3Ω, ±5%
	⚠	**ERD25FJ3R3**	Carbon, 1/4W, 3.3Ω, ±5%
		ERD25FJ332	Carbon, 1/4W, 3.3kΩ, ±5%
		ERD25FJ470	Carbon, 1/4W, 47Ω, ±5%
		ERD25FJ682	Carbon, 1/4W, 6.8kΩ, ±5%
		ERD25FJ682	Carbon, 1/4W, 6.8kΩ, ±5%
		ERD25FJ562	Carbon, 1/4W, 5.6kΩ, ±5%
		ERD25TJ394	Carbon, 1/4W, 390kΩ, ±5%
		ERD25FJ821	Carbon, 1/4W, 820Ω, ±5%
		ERD25TJ824	Carbon, 1/4W, 820kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
		ERD25TJ104	Carbon, 1/4W, 100kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
		ERD25TJ153	Carbon, 1/4W, 15kΩ, ±5%
		ERD25TJ184	Carbon, 1/4W, 180kΩ, ±5%
		ERD25TJ473	Carbon, 1/4W, 47kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
		ERD25TJ823	Carbon, 1/4W, 82kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
		ERD25TJ224	Carbon, 1/4W, 220kΩ, ±5%
		ERD25TJ823	Carbon, 1/4W, 82kΩ, ±5%
		ERD25TJ393	Carbon, 1/4W, 39kΩ, ±5%
		ERD25TJ104	Carbon, 1/4W, 100kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
		ERG3ANJ561	Metal Oxide, 3W, 560Ω, ±5%
		ERG2ANJ561	Metal Oxide, 2W, 560Ω, ±5%
		ERD25TJ124	Carbon, 1/4W, 120kΩ, ±5%
		ERD25TJ104	Carbon, 1/4W, 100kΩ, ±5%
		ERD25TJ224	Carbon, 1/4W, 220kΩ, ±5%
		ERD25TJ333	Carbon, 1/4W, 33kΩ, ±5%
		ERD25FJ822	Carbon, 1/4W, 8.2kΩ, ±5%
		ERD25TJ153	Carbon, 1/4W, 15kΩ, ±5%
		ERD25TJ333	Carbon, 1/4W, 33kΩ, ±5%
		ERD25FJ103	Carbon, 1/4W, 10kΩ, ±5%
		ERD25TJ153	Carbon, 1/4W, 15kΩ, ±5%
		ERD25TJ184	Carbon, 1/4W, 180kΩ, ±5%
		ERD25FJ103	Carbon, 1/4W, 10kΩ, ±5%
		ERD25TJ223	Carbon, 1/4W, 22kΩ, ±5%
	⚠	**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ±5%
	⚠	**ERD25FJ391**	Carbon, 1/4W, 390Ω, ±5%
		ERD25TJ473	Carbon, 1/4W, 47kΩ, ±5%
	⚠	**ERD50FJ821**	Carbon, 1/2W, 820Ω, ±5%
	⚠	**ERD50FJ681**	Carbon, 1/2W, 680Ω, ±5%
		ERG1ANJ680	Metal Oxide, 1W, 68Ω, ±5%
		ERD25FJ472	Carbon, 1/4W, 4.7kΩ, ±5%
		ERG2ANJ271	Metal Oxide, 2W, 270Ω, ±5%
	⚠	**ERD25FJ561**	Carbon, 1/4W, 560Ω, ±5%
	⚠	**ERD50FJ271**	Carbon, 1/2W, 270Ω, ±5%
		ERD25FJ471	Carbon, 1/4W, 470Ω, ±5%
	⚠	**ERD25FJ5R6**	Carbon, 1/4W, 5.6Ω, ±5%
		ERX1ANJ4R7	Metal Film, 1W, 4.7Ω, ±5%
	⚠	**ERD25FJ100**	Carbon, 1/4W, 10Ω, ±5%
		ERD25FJ560	Carbon, 1/4W, 56Ω, ±5%
		ERD25FJ271	Carbon, 1/4W, 270Ω, ±5%

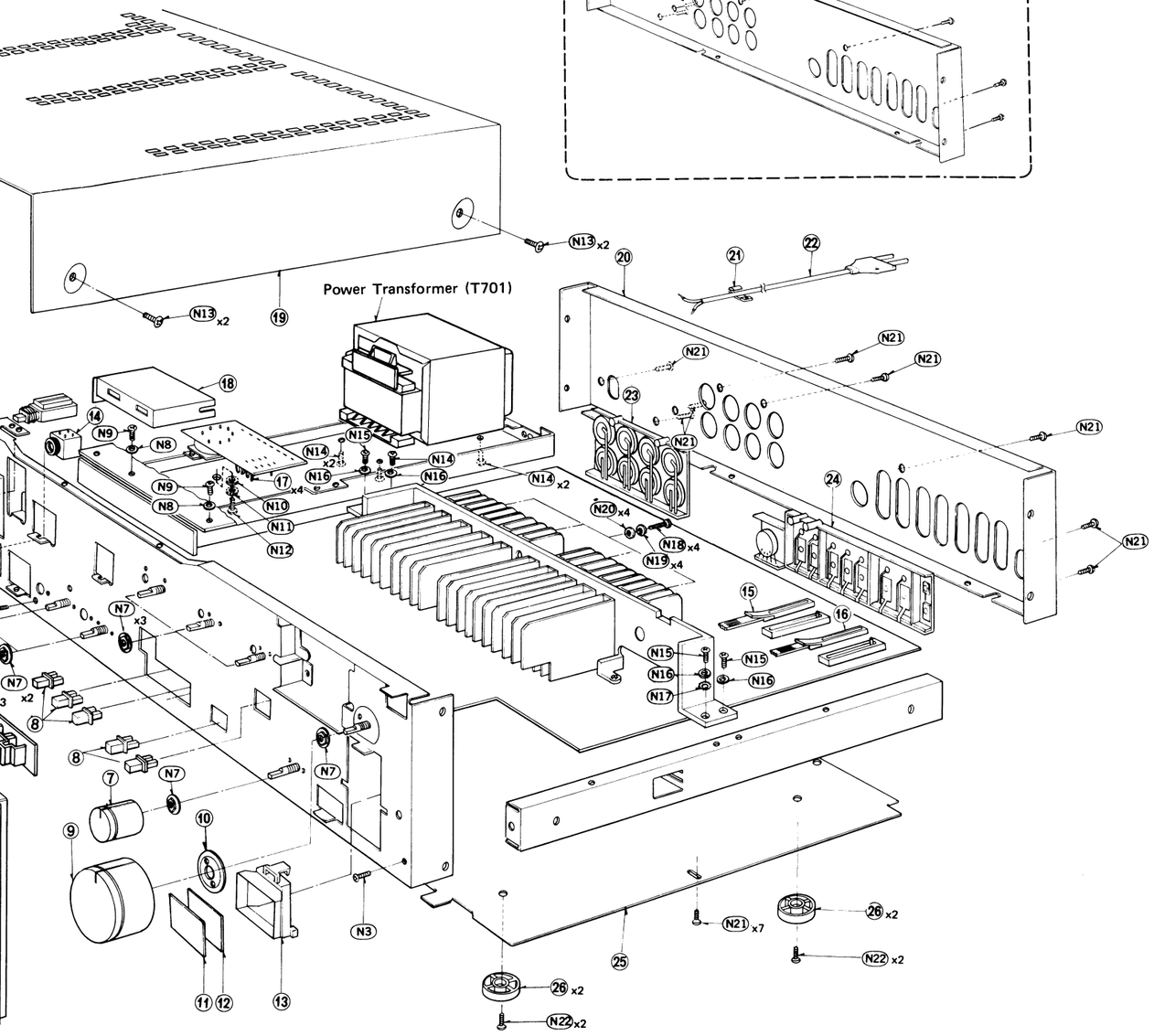
Ref. No.		Part No.	Part Name & Description
R631		**ERG1ANJ471**	Metal Oxide, 1W, 470Ω, ±5%
R632		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ±5%
R651		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ±5%
R652, 653		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ±5%
R701, 702		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ±5%
R703, 704		**ERD25FJ821**	Carbon, 1/4W, 820Ω, ±5%
R705, 706		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ±5%
R801, 802		**ERD25TJ394**	Carbon, 1/4W, 390kΩ, ±5%
R803, 804		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ±5%
R805, 806		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ±5%
R807, 808		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ±5%
CAPACITORS			
C1	⚠	ECKDKC103PF	Ceramic, 400VAC, 0.01μF, $\pm^{100}_{0}$%
C101, 102		ECQM1H103KZ	Polyester, 50V, 0.01μF, ±10%
C103, 104		ECCD1H820K	Ceramic, 50V, 82pF, ±10%
C105, 106		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C107, 108		**ECEA0JS222**	Electrolytic, 6.3V, 2200μF
C109, 110		ECQM1H473JZ	Polyester, 50V, 0.047μF, ±5%
C111, 112		ECQM1H103JZ	Polyester, 50V, 0.01μF, ±5%
C113, 114		ECQM1H332KZ	Polyester, 50V, 0.0033μF, ±10%
C115, 116	⚠	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3μF
C117, 118		ECQM1H472KZ	Polyester, 50V, 0.0047μF, ±10%
C131, 132		ECKD1H103ZF	Ceramic, 50V, 0.01μF, $\pm^{80}_{20}$%
C133		ECKD1H103ZF	Ceramic, 50V, 0.01μF, $\pm^{80}_{20}$%
C201, 202		ECCD1H181K	Ceramic, 50V, 180pF, ±10%
C203, 204		ECQM1H682KZ	Polyester, 50V, 0.0068μF, ±10%
C205, 206		ECQM1H563KZ	Polyester, 50V, 0.056μF, ±10%
C207, 208		ECQM1H473KZ	Polyester, 50V, 0.047μF, ±10%
C301, 302		ECKD1H471KB	Ceramic, 50V, 470pF, ±10%
C303, 304		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C305, 306		ECCD1H390K	Ceramic, 50V, 39pF, ±10%
C307, 308		**ECEA50Z4R7**	Electrolytic, 50V, 4.7μF, ±10%
C309, 310		ECCD1H270K	Ceramic, 50V, 27pF, ±10%
C311, 312		ECCD1H270K	Ceramic, 50V, 27pF, ±10%
C313, 314		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C315, 316		ECKD1H681KB	Ceramic, 50V, 680pF, ±10%
C321, 322		ECCD1H030C	Ceramic, 50V, 3pF, ±0.25pF
C323, 324		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C325, 326		ECQM1H223KZ	Polyester, 50V, 0.022μF, ±10%
C327, 328		ECQM1H124KZ	Polyester, 50V, 0.12μF, ±10%
C329, 330		ECQS1821JZ	Styrol, 125V, 820pF, ±5%
C331, 332		ECCD1H181K	Ceramic, 50V, 180pF, ±10%
C333, 334		ECQM1H102KZ	Polyester, 50V, 0.001μF, ±10%
C335, 336		ECQM1H272KZ	Polyester, 50V, 0.0027μF, ±10%
C337, 338		ECQM1H393KZ	Polyester, 50V, 0.039μF, ±10%
C339, 340		**ECEA50Z1**	Electrolytic, 50V, 1μF
C341, 342	⚠	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3μF
C343, 344		**ECEA1JS470**	Electrolytic, 63V, 47μF
C345, 346		**ECEA1JS100**	Electrolytic, 63V, 10μF
C361, 362		**ECEA1HS100**	Electrolytic, 50V, 10μF
C363, 364		ECCD1H050C	Ceramic, 50V, 5pF, ±0.25pF
C371, 372		**ECEA1JS100**	Electrolytic, 63V, 10μF
C401, 402		ECQM1H473KZ	Polyester, 50V, 0.047μF, ±10%
C403		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C404		ECKD1H103ZF	Ceramic, 50V, 0.01μF, $\pm^{80}_{20}$%
C406		ECQM1H683KZ	Polyester, 50V, 0.068μF, ±10%
C410		**ECEA50Z1**	Electrolytic, 50V, 1μF
C451		ECKD1H103ZF	Ceramic, 50V, 0.01μF, $\pm^{80}_{20}$%
C501		ECEA1CN101S	Non-Polar Electrolytic, 16V, 100μF
C502		**ECEA50Z3R3**	Electrolytic, 50V, 3.3μF
C503		**ECEA1CS330**	Electrolytic, 16V, 33μF
C504		**ECEA2AS100**	Electrolytic, 100V, 10μF
C505		ECKD1H103ZF	Ceramic, 50V, 0.01μF, $\pm^{80}_{20}$%
C506		**ECEA50Z1**	Electrolytic, 50V, 1μF
C507, 508	⚠	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3μF
C511	⚠	ECEA1CN100S	Non-Polar Electrolytic, 16V, 10μF
C601, 602		ECETS56V822U	Electrolytic, 56V, 8200μF
C603, 604		**ECEA1HS100**	Electrolytic, 50V, 10μF
C605, 606		**ECEA1HS100**	Electrolytic, 50V, 10μF
C607		**ECEA1HS100**	Electrolytic, 50V, 10μF
C608		ECKD1H103ZF	Ceramic, 50V, 0.01μF, $\pm^{80}_{20}$%
C609		**ECEA1VS330**	Electrolytic, 35V, 33μF
C621		**ECEA1ES101**	Electrolytic, 25V, 100μF
C631, 632		**ECEA1HS100**	Electrolytic, 50V, 10μF
C701, 702		**ECEA50ZR47**	Electrolytic, 50V, 0.47μF
C703		**ECEA50ZR47**	Electrolytic, 50V, 0.47μF
C705, 706		ECKD1H332KB	Ceramic, 50V, 0.0033μF, ±10%

■ EXPLODED VIEW



Rear Panel and AC Outlet . . . for [XA]





Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1	○	SYW487	Front Panel Ass'y
1	Ⓚ	SYW487–1	Front Panel Ass'y (Black)
2		SBN995	Knob, Speaker, Input and Rec Selector
3	○	SGX7133	Ornament, Display Window
3	Ⓚ	SGX7133–1	Ornament, Display Window (Black)
4		SGU237	Transparent Cover, FL
5	○	SDU81	Filter, FL
5	Ⓚ	SDU81–1	Filter, FL (Black)
6		SBC337	Button, Power Source
7		SBN1065	Knob, Bass, Treble and Balance
8		SBC409	Button,
9		SBN999–1	Knob, Main Volume
10		SHP9301–1	Spacer, Knob (Main Volume)
11		SDU51–1	Filter, Lamp (new class A)
12		SDE259–1	Tinted Cover
13		SMP305	Case, Lamp (new class A)
14		XCJS6P21B–A1	Jack, Headphone
15		ESA3385B	Remote Control, Rec Selector
16		ESA3386B	Remote Control, Input Selector
17		SJT347	Holder, Fuse
18		SMX455	Cover, PCB
19	○	SKC810S1	Cabinet Cover
19	Ⓚ	SKC810B1	Cabinet Cover (Black)
19 [EK] only	Ⓚ	SKC810B2	Cabinet Cover (Black for United Kingdom)
20		SGPUV5E	Rear Panel
20 [XL] only		SGP2790–1B	Rear Panel
20 [XA] only		SGP2790–2B	Rear Panel
20 [E] only		SGP2790B	Rear Panel
21		SHR127	Bushing, AC Cord
21 [EK] only		SHR129	Bushing, AC Cord
21 [XL] only		SHR 131	Bushing, AC Cord
22	⚠	**SJA88**	AC Cord
22 [EK] only	⚠	**QFC1205M**	AC Cord
22 [XL] only	⚠	**QFC1207MA**	AC Cord
22 [XA] only	⚠	SJA111	AC Cord
23		SJF4813–1	Terminal Board, Speaker
24		SJF3045–10N	Terminal Board, Input
25		SKU9330	Bottom Cover
26		SKL227–1	Foot
27 [XA] only	⚠	SJS601–3	Socket, AC Outlet
SCREWS, WASHERS and NUTS			
N1		XXE4D5FZ	Screw, Selector Switch
N2		**XTB3+8BFZ**	Screw, Tapping ⊕ 3x8
N3		XTBS3+8BFZ1	Screw, Tapping with Detent ⊕ 3x8
N4		**XSN3+6S**	Screw, ⊕ 3x6
N5		**XWA3B**	Washer, Spring ϕ3
N6		**XNS12**	Nut, ϕ12
N7		SNE4021	Nut, Volume and Switch
N8		**XWG3**	Washer, Plain ϕ3
N9		**XTN3+8B**	Screw, Tapping ⊕ 3x8
N10		**XWG3**	Washer, Plain ϕ3
N11		**XWA3B**	Washer, Spring ϕ3
N12		**XSN3+10S**	Screw, ⊕ 3x10
N13	○	**XTB4+8BFN**	Screw, Tapping ⊕ 4x8
N13	Ⓚ	**XTB4+8BFZ**	Screw, Tapping ⊕ 4x8
N14		**XTB4+10BFZ**	Screw, Tapping ⊕ 4x10
N15		**XTN3+10B**	Screw, Tapping ⊕ 3x10
N16		**XWG3**	Washer, Plain ϕ3
N17		**XWC4B**	Washer, External Toothed Lock ϕ4
N18		**XTN3+12B**	Screw, Tapping ⊕ 3x12
N19		**XWA3B**	Washer, Spring ϕ3
N20		**XWG3**	Washer, Plain ϕ3
N21		XTBS3+8BFZ1	Screw, Tapping with Detent ⊕ 3x8
N22		**XTB3+10BFZ**	Screw, Tapping ⊕ 3x10

Ref. No.		Part No.	Part Name & Description
ACCESSORIES			
A1 [XA] only	⚠	SJP5213–1	Plug Adapter, AC Power
A2 [XA] only	⚠	SJP5215	Plug Adapter, AC Power
A3		SQF10843	Instructions Book, Printed Matter
A3 [XL] only		SQF10845	Instructions Book, Printed Matter
A3 [XA] only		SQF10847	Instructions Book, Printed Matter
A3 [EI] only		SQF10933	Instructions Book, Printed Matter
PACKING PARTS			
P1		SPP689	Polyethylene Bag
P2		SPS3257	Pad, Left Side
P2 [XL] only		SPS3257–1	Pad, Left Side
P3		SPS3259	Pad, Right Side
P3 [XL] only		SPS3259–1	Pad, Right Side
P4	○	SPG3233	Carton Box
P4 [XL] only	○	SPG3235	Carton Box
P4 [EF] only	○	SPG3237	Carton Box
P4	Ⓚ	SPG3239	Carbon Box

● Accessories

Areas

* [E] is available in Scandinavia and Switzerland.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EH] is available in Holland.
* [EB] is available in Belgium.
* [Ei] is available in Italy.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

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ORDER NO. SD81082012C4

Service Manual

Stereo Integrated DC Amplifier

SU-V5

[PA],[PE]

Areas

[PA] is available in far East PX.
[PE] is available in European Military.

Please use this manual together with the service manual for Model No. SU-V5/SU-V5(K), Order No. SD81061923C8.

CHANGES

■ REPLACEMENT PARTS LIST

Ref. No.	Change of Part No. SU-V5 (ORDER NO. SD8106-1923C8)	→ SU-V5 [PA], [PE]	Part Name & Description	Per Set	Remarks
CABINET and CHASSIS PARTS					
1	SYW487 SYW487–1 (K)	SYW487	Front Panel Ass'y	1	
3	SGX7133 SGX7133–1 (K)	SGX7133	Ornament, Display Window	1	
5	SDU81 SDU81–1 (K)	SDU81	Filter, FL	1	
11	SDU51–1	SDU59	Filter, New Class A Lamp	1	
12	SDE259–1	SDE259	Tinted Cover	1	
19	SKC810S1 SKC810B1 (K) SKC810B2 [EK] (K)	SKC810S1	Cabinet Cover	1	
20	SGPUV5E SGP2790–1B [XL] SGP2790–2B [XA] SGP2790B [E]	SGP2790–2B	Rear Panel	1	
21	SHR127 SHR129 [EK] SHR131 [XL]	SHR127	Bushing, AC Cord	1	
22	SJA88 QFC1205M [EK] QFC1207MA [XL] SJA111 [XA]	**RJA52Z**	AC Cord	1	RD
27	SJS601–3 [XA]	SJS601–3	Socket, AC Outlet	1	
SCREWS					
N13	XTB4+8BFN XTB4+8BFZ (K)	XTB4+8BFN	Screw, Cabinet Cover M'tg	4	
ACCESSORIES					
A1	SJP5213–1 [XA]	RJP120ZBS	Plug Adapter, AC Power	1	
A2	SJP5215 [XA]	Deletion	Plug Adapter	0	
A3	SQF10843 SQF10845 [XL] SQF10847 [XA] SQF10933 [Ei]	SQF10849	Instructions Book, Printed Matter	1	○

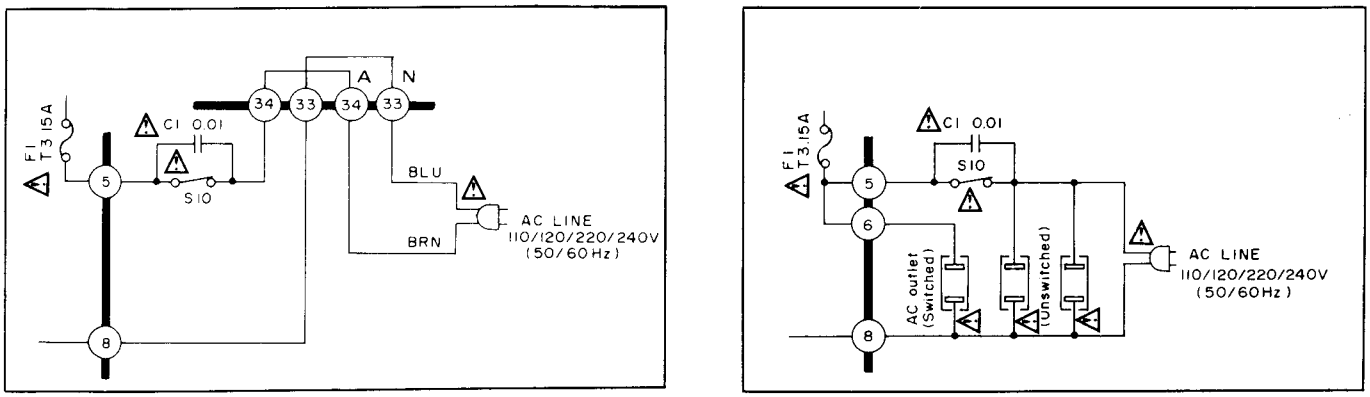
Technics
Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shibakoen, Minato-ku, Tokyo 105 Japan
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Ref. No.	Change of Part No. SU-V5 (ORDER NO. SD8106-1923C8) → SU-V5 [PA], [PE]		Part Name & Description	Per Set	Remarks
PACKING PARTS					
P2	SPS3257	SPS3257	Pad, Left Side	1	
	SPS3257–1 [XL]				
P3	SPS3259	SPS3259	Pad, Right Side	1	
	SPS3259–1 [XL]				
P4	SPG3233	SPG3233	Carton Box	1	
	SPG3235 [XL]				
	SPG3237 [EF]				
	SPG3239 Ⓚ				

■ SCHEMATIC DIAGRAM

• Power source circuit

SU-V5/SU-V5(K) → SU-V5 – [PA], [PE]



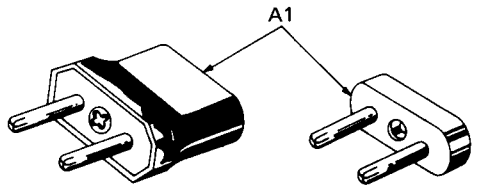
■ REPLACEMENT PARTS LIST (Cabinet and Chassis Parts)

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1		SYW487	Front Panel Ass'y
2		SBN995	Knob, Speaker Input and Rec Selector
3		SGX7133	Ornament, Display Window
4		SGU237	Transparent Cover, FL
5		SDU81	Filter, FL
6		SBC337	Button, Power Source
7		SBN1065	Knob, Bass, Treble and Balance
8		SBC409	Button, Push Switch
9		SBN999–1	Knob, Main Volume
10		SHP9301–1	Spacer, Knob (Main Volume)
11		SDU59	Filter, Lamp (new class A)
12		SDE259	Tinted Cover
13		SMP305	Case, Lamp (new class A)
14		XCJS6P21B–A1	Jack, Headphone
15		ESA3385B	Remote Control, Rec Selector
16		ESA3386B	Remote Control, Input Selector
17		SJT347	Holder, Fuse
18		SMX455	Cover, PCB
19		SKC810S1	Cabinet Cover
20		SJP2790-2B	Rear Panel
21		SHR127	Bushing, AC Cord
22	⚠	**RJA52Z**	AC Cord
23		SJF4813–1	Terminal Board, Speaker
24		SJF3045–10N	Terminal Board, Input
25		SKU9330	Bottom Cover
26		SKL227–1	Foot
27	⚠	SJS601 –3	Socket, AC Outlet

Ref. No.		Part No.	Part Name & Description
ACCESSORIES			
A1	⚠	RJP120ZBS	Plag Adapter, AC Power
A3		SQF10849	Instructions Book, Printed Matter
PACKING PARTS			
P1		SPP689	Polyethylene Bag
P2		SPS3257	Pad, Left Side
P3		SPS3259	Pad, Right Side
P4		SPG3233	Carton Box

• Accessory



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